



# COLOR TELEVISION RECEIVER

Chassis : S51A  
Model: CK6202X3S/NWT  
CK6202X3X/BWT

# ***SERVICE*** Manual

## COLOR TELEVISION RECEIVER



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# 1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

## 1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.
2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.
3. Make sure that there are no cabinet openings through which people—particularly children—might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.

4. Leakage Current Hot Check (Figure 1-1):  
Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANIS C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).
5. With the unit completely reassembled, plug the AC line cord directly into the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

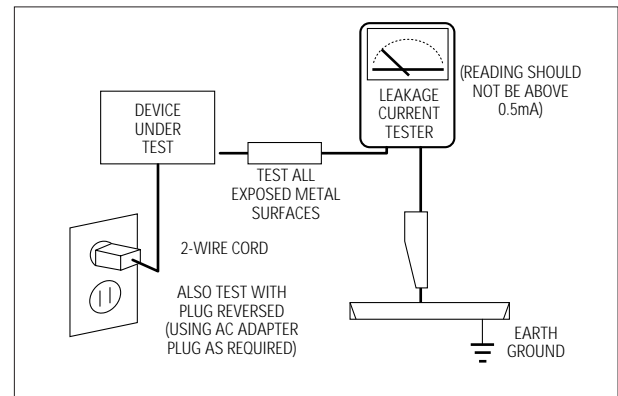




Fig. 1-1 AC Leakage Test

6. Antenna Cold Check:  
With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.
7. X-ray Limits:  
The picture tube is especially designed to prohibit X-ray emissions. To ensure continued X-ray protection, replace the picture tube only with one that is the same type as the original. Carefully reinstall the picture tube shields and mounting hardware; these also provide X-ray protection.
8. High Voltage Limits:  
High voltage must be measured each time servicing is done on the B+, horizontal deflection or high voltage circuits. Correct operation of the X-ray protection circuits must be reconfirmed whenever they are serviced.  
(X-ray protection circuits also may be called "horizontal disable" or "hold-down".)

Heed the high voltage limits. These include the X-ray Protection Specifications Label, and the Product Safety and X-ray Warning Note on the service data schematic.

## 1-1 Safety Precautions (Continued)

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9. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.
10. Design Alteration Warning:  
Never alter or add to the mechanical or electrical design of this unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.
11. Hot Chassis Warning:  
Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.  
  
To confirm that the AC power plug is inserted correctly, do the following: Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.
12. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, regardless of the AC plug polarity. These units can be safely serviced only if an isolation transformer inserted between the receiver and the power source.
13. Some TV chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.
14. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.
15. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.
16. Picture Tube Implosion Warning:  
The picture tube in this receiver employs "integral implosion" protection. To ensure continued implosion protection, make sure that the replacement picture tube is the same as the original.
17. Do not remove, install or handle the picture tube without first putting on shatterproof goggles equipped with side shields. Never handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; do not try to remove such "permanently attached" yokes from the picture tube.
18. Product Safety Notice:  
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.  
  
Components that are critical for safety are indicated in the circuit diagram by shading, () or ().  
Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

## 1-2 Servicing Precautions

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Warning1: First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.

Warning2: An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet. Follow them.
2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.
3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.
5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.  
  
The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
8. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

### 1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

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1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.
2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power—this is an electric shock precaution.)
3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.
4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.
5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.
6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static"; these can accumulate sufficient electrical charge to damage ESDs.
7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

## 2. Specifications and IC Data

### 2-1 Specifications

Television System:

MODEL	SYSTEM
CI	PAL-I (UHF)
CII	PAL-I (VHF/UHF)
CX	PAL-B/G, SECAM-B/G
CK	PAL-B/G, D/K, SECAM-B/G, D/K
CB	PAL-B/G
CF	SECAM-L/L', PAL/SECAM-B/G

Channels:

BAND \ SYSTEM	PAL/SECAM -B/G, I	PAL/SECAM -D/K	SECAM-K1, PAL-D
VHF	2-12	1-13	2-9
UHF	21-69	21-69	13-57

Intermediate-Frequencies(MHz):

BAND \ SYSTEM	PAL/SECAM -B/G	PAL/SECAM -D/K, K1	PAL-I	SECAM-L	SECAM-L'
Picture IF Carrier	38.90	38.90	38.90	38.90	34.50
Sound IF Carrier	33.40	32.40	32.90	34.40	41.00
Color Sub Carrier	34.47	34.47	34.47	34.47	38.93

Picture Tube:

21 Inch	A51EER131X31	Quick start, in-line-gun, Black stripe, 90° degree deflection
25 Inch	A59EAK071X01 (Normal) A59EAK552X21 (Invar)	
28 Inch	A66EAK071X01 (Normal) A66EAK552X21 (Invar)	
30 Inch	A70QBZ791X	

Power Requirements: AC 230 V, 50Hz or AC 220 ~ 240 V, 50Hz

Antenna Input Impedance:

VHF, UHF: Telescopic dipole antenna (75Ω unbalanced type)

Speaker Impedance: 8Ω, 10W + 10W or 16Ω, 5W + 5W (533C only)

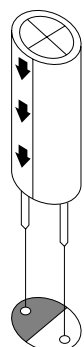
## 2-2 IC Line Up

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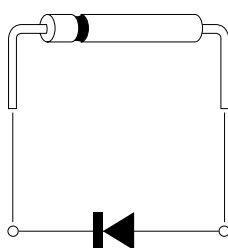
LOC NO	NO	Specification	Description	Remarks
HIC101	1	PAP103T	IF PRE-AMP	
IC201	2	TDA8844	PAL/SECAMNTSC/SECAM-L	
		TDA8843	PAL/NTSC	
IC301	3	LA7845	VERTICAL DEFLECTION AMP	
IC501	4	TDA6108	RGB DRIVE AMP	
IC601	5	TDA7297	SOUND AMP(10W/CH)	
		TDA7266S	SOUND AMP(5W/CH)	
IC701	6	TDA9859	AUDIO PROCESSOR	
IC801	7	KA3S1265R	SMPS IC(12A)	
IC802	8	PC123Y	PHOTO COUPLER	
IC803	9	78R05	SWITCHING REGULATOR	
IC804	10	KA7630	SWITCHING REGULATOR(5,8V)	
IC901	11	SPM171EE	MICOM	
IC902	12	24W16	EEPROM	16K
ICE01	13	4558	EW DRIVE AMP	
ICN01	14	TDA9814T	SIF DETECTOR (SECAM-L)	NICAM MODULE
ICN02	15	TDA9874H	NICAM DEMODULATOR	
ICA01	16	LA7567N	SIF DETECTOR	A2 STEREO MODULE
ICA02	17	TDA9873H	A2 DEMODULATOR	
ICM01	18	LA7566	SIF & FM DETECTOR	MONO
ICS01	19	TEA5114	VIDEO SWITCH	RGB -S/W



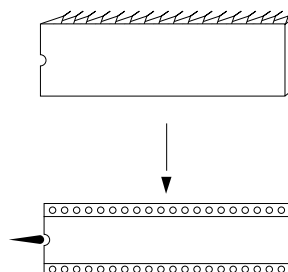
## 2-3 Semiconductor Base Diagrams

ELECTROLYTIC-  
CONDENSER

DIODE

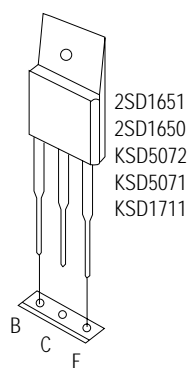


IC



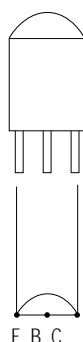
TDA884X(Pin 56)  
SPM171EX(Pin 52)  
24W16(Pin 8)  
TDA9859(Pin 32)

TRANSISTOR



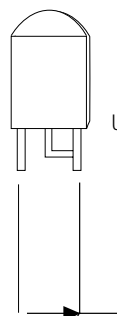
2SD1651  
2SD1650  
KSD5072  
KSD5071  
KSD1711

TRANSISTOR



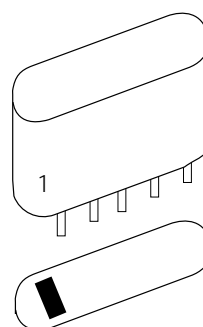
KSA815-Y  
KSA539-Y

IC

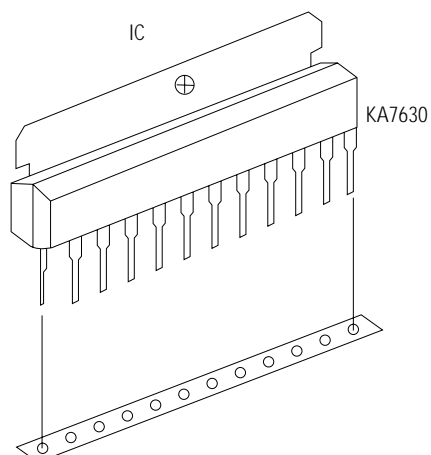


UPC574J  
or  
KA33V

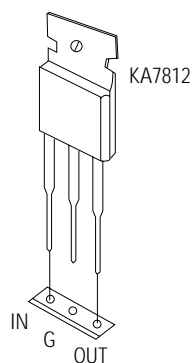
SAW-FILTER



G1962  
K2950M  
K9253M  
G3956M



TRANSISTOR



KA7812

TRANSISTOR



KSR1012  
KSR1010  
KSR2010

Fig. 2-1 Semiconductor Base Diagrams

# MEMO

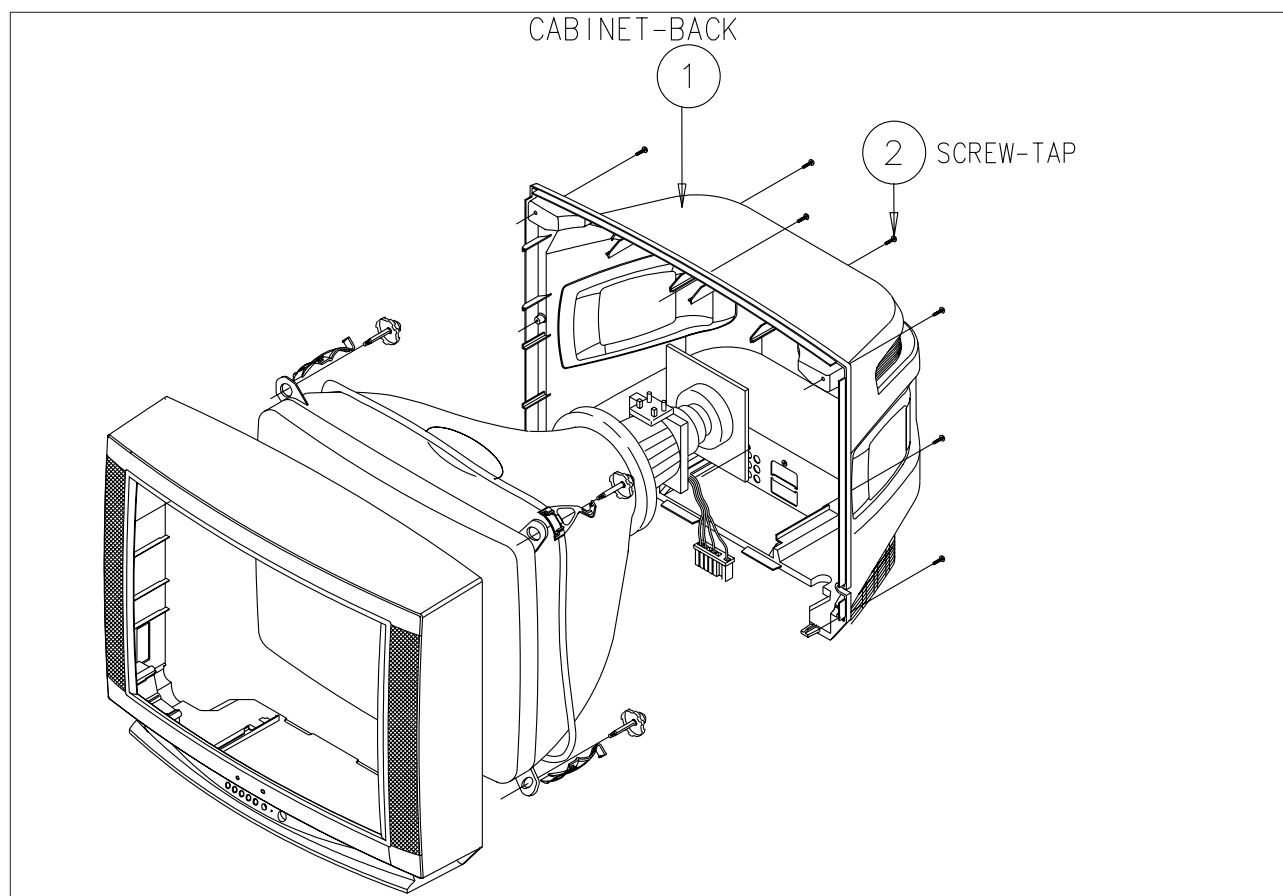
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## 3. Disassembly and Reassembly

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### 3-1 Back Cover Removal

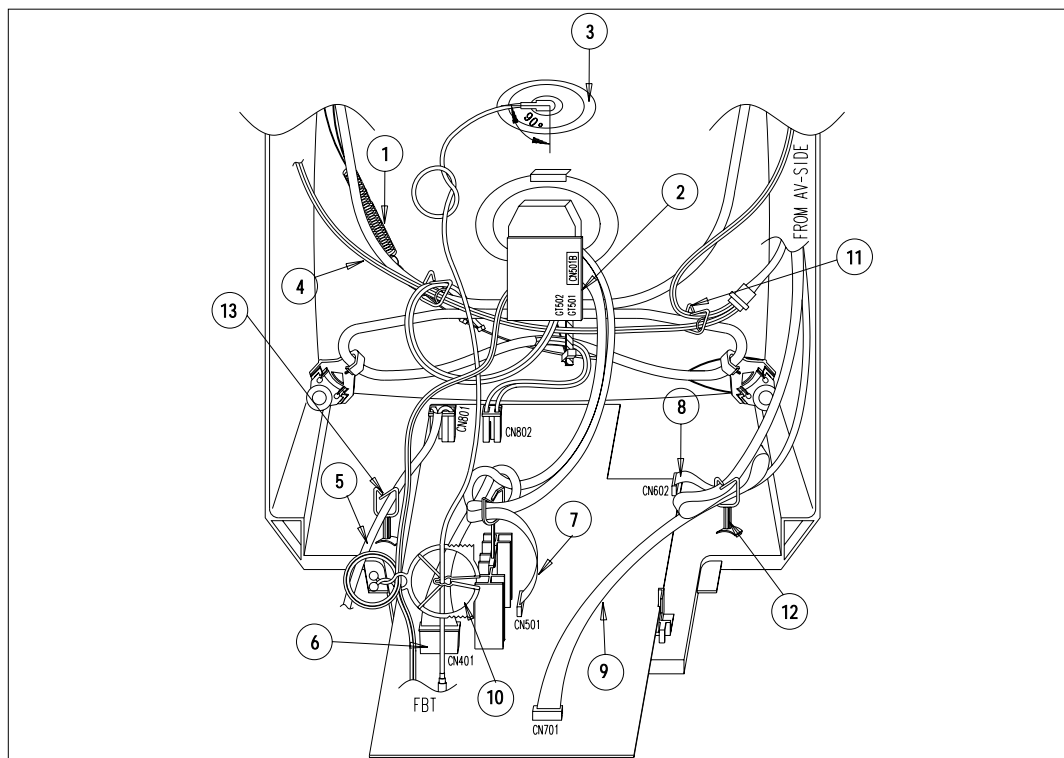
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1. After removing the 7 screws, pull the cabinet backwards.

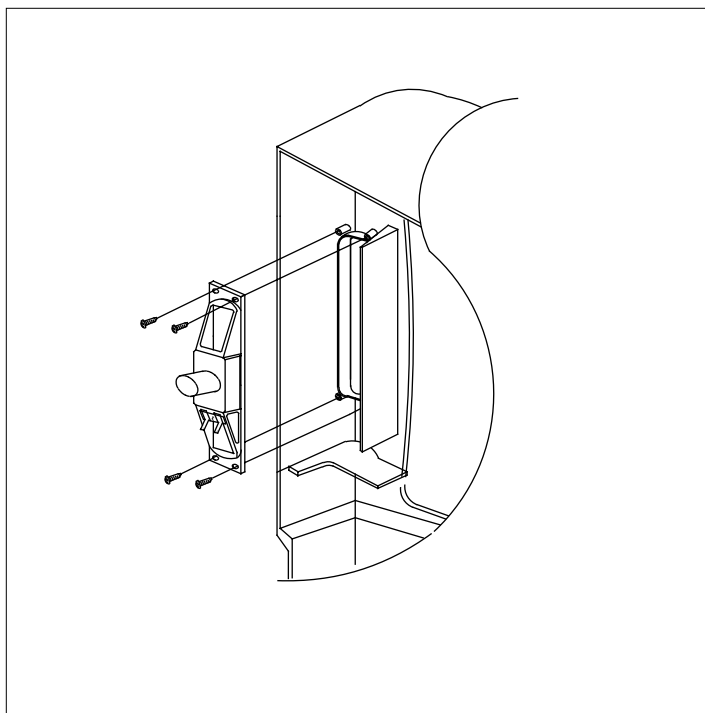
## 3-2 Main Board Removal

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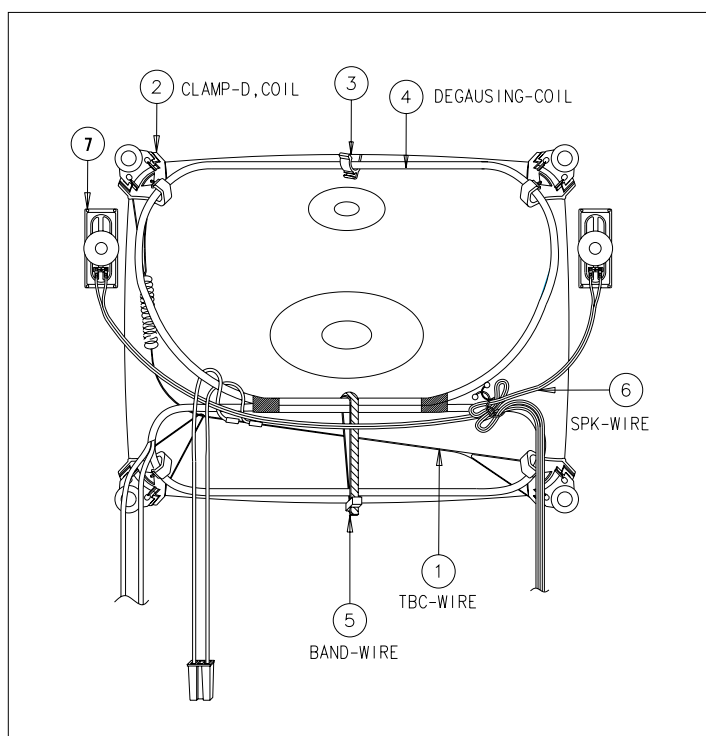


1. Separate the TBC-wire 2P connector from GT501,GT502.
2. Separate the CRT Assembly from the CRT socket.
3. Remove the Anode Cap from the CRT.
4. Separate the D-Coil Connector from CN802.
5. Separate the AC cord from CN801.
6. Separate the DC connector from CN401.
7. Separate the CN501B 8P CRT connector from CN501.
8. Separate the CNA05 5P A/V side connector from CN602.
9. Separate the CNA01 8P CRT connector from CN701.
10. Separate the Focus Screen Wire from the FBT clamper.
11. Separate the TBC wire 2P, speaker wires from the wire clamper.
12. Separate the CN701, CN602 connector from the wire clamper.
13. Separate the AC cord from the wire clamper.
14. Remove the main board by pulling it with both hands.

### 3-3 Speaker Removal



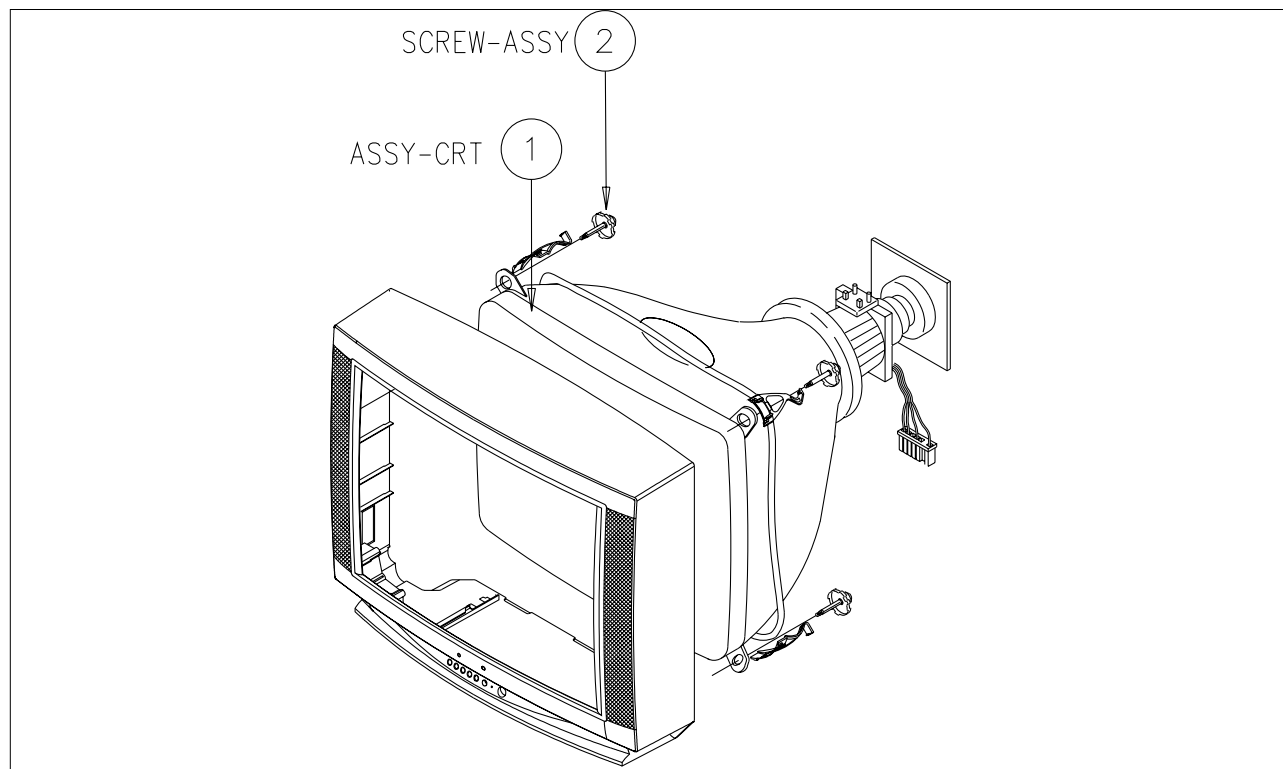
1. Remove the speaker by pressing the tension rib.



1. Separate the speaker wires from D-coil (located on the bottom to the right side).
2. Remove the screws.

### 3-4 CRT Removal

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1. Remove the 4 nuts that mount the CRT to the front cabinet.  
Pull the CRT backwards.
2. Caution: Because of the high vacuum and large surface area of the picture tube, be careful while handling it: (1) Always lift the picture tube by grasping it firmly around the faceplate, (2) Never lift the tube by its neck. (3) Do not scratch the picture tube or apply excessive pressure. Fractures of the glass may cause an implosion.

## 4. Alignment and Adjustments

### 4-1 Preadjustment

#### 4-1-1 Factory Mode

1. Do not attempt these adjustments in the Video Mode.
2. The Factory Mode adjustments are necessary when either the EEPROM (IC902) or the CRT is replaced.
3. Do not tamper with the "Adjustment" screen of the Factory Mode menu. This screen is intended only for factory use.

#### 4-1-2 When EEPROM (IC902) Is Replaced

1. When IC902 is replaced all adjustment data revert to initial values. It is necessary to re-program this data.
2. After IC902 is replaced, warm up the TV for 10 seconds.

#### 4-1-3 When CRT Is Replaced

1. Make the following adjustments AFTER setting up after setting up purity and convergence :

White Balance  
Sub-Brightness, Sub-Contrast  
Vertical Center  
Vertical Size  
Horizontal Size  
Fail Safe (This adjustment must be the last step).

### 4-2 Factory/Service Mode

#### 4-2-1 Procedure for the "Adjustment" Mode

1. This mode uses the standard remote control. The Service Mode is activated by entering the following remote-control sequence :  
  
(1) STAND-BY → DISPLAY → MENU → MUTE → POWER ON.
2. The "SERVICE (FACTORY)" message will be displayed. The Service Mode has three components: Adjustment, Option and Reset.
3. Access the Adjustment Mode by pressing the "VOLUME" keys ( Up or Down). The adjustment parameters are listed in the accompanying table, and selected by pressing the CHANNEL keys (▲, ▼).

4. Selection sequences for the PAL system:

DOWN or UP key:

AGC ↔ VCO ↔ SBT ↔ SCT ↔ SCR ↔ SC ↔ RG ↔  
BG ↔ CDL ↔ STT ↔ LCO ↔ VOL ↔ PSL ↔ PVS ↔  
PVA ↔ PHS ↔ PEW ↔ PEP ↔ PEC ↔ PET ↔ VSC ↔  
TSC ↔ SA ↔ QEW ↔ PCT ↔ PTT ↔ PHM ↔ PVP ↔  
PHP ↔ NSR ↔ PDL ↔ AGC.

5. The VOLUME keys increase or decrease the adjustment values (stored in the non-volatile memory) when Adjustment Mode is cancelled.
6. Cancel the Adjustment Mode by re-pressing the "HIDDEN" or "Power OFF/ON" keys.
7. After adjustments are completed, re-start the TV set.

## 4-2-2 Main Adjustment Parameters

OSD	FUNCTION	RANGE
AGC	AUTO GAIN CONTROL	0 - 63
VCO	VOLTAGE CONTROLLED OSCILLATOR	0 - 127
SBT	SUB BRIGHTNESS	0 - 23
SCT	SUB CONTRAST	0 - 23
SCR	SUB COLOUR	0 - 23
SC	S-CORRECTION	0 - 63
RG	RED DRIVE GAIN	0 - 63
BG	BLUE DRIVE GAIN	0 - 63
CDL	CATHODE DRIVE LEVEL	0 - 7
STT	SUB TINT ( FOR NTSC )	0 - 7
LCO	SECAM-L VOLTAGE CONTROLLED OSCILLATOR	0 - 1
VOL	VOLUME INITIAL LEVEL	0 - 63
PSL	PAL VERTICAL SLOPE	0 - 63
PVS	PAL VERTICAL SHIFT	0 - 63
PVA	PAL VERTICAL AMPLITUDE	0 - 63
PHS	PAL HORIZONTAL SHIFT	0 - 63
PEW	PAL E-W WIDTH	0 - 63
PEP	PAL E-W PALABOLA	0 - 63
PEC	PAL E-W CORNER	0 - 63
PET	PAL E-W TRAPEZIUM	0 - 63
VSC	VERTICAL SCROLL	0 - 63
TSC	TELETEXT SUB CONTRAST	0 - 63
SA	SEPARATION ADJUSTMENT (STEREO)	0 - 15
QEW	Q(12.8:9) MODEL E-W WIDTH	0 - 7
PCT	PIP CONTRAST	0 - 15
PTT	PIP TINT	0 - 63
PHM	PIP HORIZONTAL MOVE	0 - 15
PVP	PIP VERTICAL POSITION	0 - 63
PHP	PIP HORIZONTAL POSITION	0 - 63
NSR	NTSC SUB COLOUR	0 - 23
PDL	PAL DELAYTIME	0 - 15



## FACTORY MODE VALUE

OSD	INITIAL	OSD	INITIAL	OSD	INITIAL
2 (CH)		LCO	1 (FIXED)	TSC	20(FIXED)
AGC	10	VOL	25	SA	7
VCO	80(FIXED)	PSL	31(FIXED)	QEW	5
SBT	7	PVS	31	PCT	7(FIXED)
SCT	16	PVA	31	PTT	31(FIXED)
SCR	5(FIXED)	PHS	40	PHM	8(FIXED)
SC	11(FIXED)	PEW	38	PVP	31(FIXED)
RG	31	PEP	22	PHP	31(FIXED)
BG	31	PEC	22	NSR	3 (FIXED)
CDL	5	PET	30	PDL	0 (FIXED)
STT	10(FIXED)	VSC	31(FIXED)		

### 4-2-3 AGING Mode (Reference Only)

This pattern is used for pre-heating the CRT during manufacturing--it is accessed in the factory by twice pressing the "FACTORY " key.

Even if the TV power is cut off, the Aging Mode is not cancelled, The AGING mode is cancelled by repressing the "HIDDEN" or any key on the front pannel.

#### 4-2-4 Option Byte Table

Option Byte
1.ZOOM MODE : NORMAL/ZOOM/16:9
2.AUDIO MODE : NICAM STEREO
3.ONE CHIP : TDA8844
4.LED OPTION : NORMAL
5.LANGUAGE : WEST ENG/GER/FRA/DUT/SPA/ITA/SWE
6.SYSTEM: CX
7.ATS OPTION : ON
8.FIELD POL : FIELD POS

OPTION	OSD	NOTE
ZOOM MODE	PLU/NOR/ZOOM/16:9	12.8 : 9 CRT USED(30",22")
	NORMAL/ZOOM/16:9	NORMAL CRT USED
	NORMAL/ZOOM	
	PLUS/NORMAL	12.8 : 9 CRT USED(26")
AUDIO MODE	NICAM STEREO	NICAM MODULE USED
	STEREO	A2 MODULE USED
	LINE STEREO	MONO MODULE USED (LINE STEREO MODEL )
	MONO	MONO MODULE USED (MONO MODEL )
ONECHIP	TDA8844	CRT(MORE THAN 22-INCH)USED
	TDA8842	CRT(MORE THAN 21-INCH)USED
LED OPTION	NORMAL	DEFAULT
	POLAND	POLAND MODEL ONLY
LANGUAGE	WEST ENG/GER/FRA/DUT/SPA/ ITA/SWE	WEST EUROPE MARKET ENGLISH/GERMANY/FRANCE/ NETHERLANDS/SPAIN/ITALY/SWEDEN
	EAST ENG/CZE/CRO/RUM/HUN/ POL	EAST EUROPE MARKET ENGLISH/CZECH/CROATIA/ROMANIA/ HUNGARY/POLAND
SYSTEM	CF	SECAM-L/L', PAL/SECAM-B/G
	CI	PAL - I ( UHF BAND ONLY)
	CK	PAL/SECAM - B/G,D/K
	CX	PAL/SECAM -B/G
	CB	PAL -B/G
ATS OPTION	ON	ATM FUNCTION USED
	OFF	ATM FUNCTION NOT USED
FIELD POL	FIELD POS	PHILIPS CRT USED
	FIELD NEG	OTHER CRT USED

### 4-2-5 RESET

The Reset Mode is used during factory inspection.  
Function Reset:

- |                 |                |
|-----------------|----------------|
| 1. Channels     | Add/Erase      |
| 2. Language     | Last condition |
| 3. Station name | Clear          |

## 4-3 Other Adjustments

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### 4-3-1 General

1. Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.
2. The picture should have good black and white details. There should be no objectionable color shading; if color shading is present, perform the purity and convergence adjustments described below.
3. Use the specified test equipment or its equivalent.
4. Correct impedance matching is essential.
5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.
6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
8. To protect against shock hazard, use an isolation transformer.

### 4-3-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation.

The degaussing coil operates for about 1 second after the power is switched ON. If the set has been moved or turned in a different direction, disconnect its AC power for at least 30 minutes.

If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before removing power.

### 4-3-3 High Voltage Check

CAUTION: There is no high voltage adjustment on this chassis. The B+ power supply must be set to +155 volts (Full color bar input and normal picture level).

1. Connect a digital voltmeter to the second anode of the picture tube.
2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).
3. The high voltage should not exceed 33KV.
4. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 33KV under any conditions.

### 4-3-4 FOCUS Adjustment

1. Input a black and white signal.
2. Adjust the tuning control for the clearest picture.
3. Adjust the FOCUS control for well defined scanning lines in the center area of the screen.

### 4-3-5 Screen Adjustment

1. Connect CRT socket pin GK, BK, RK to an oscilloscope probe.
2. Input a gray scale pattern. (Use a pattern generator, PM5518)
3. Use the Picture mode for the STANDARD picture.
4. Adjust the Screen VR (on the FBT) so that the voltage on the oscilloscope becomes  $140 \pm 2.5V$  (See Fig. 4-1).

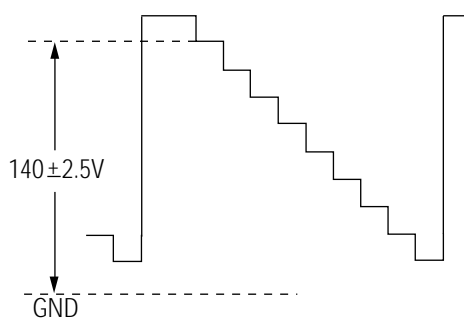


Fig. 4-1

### 4-3-6 Purity Adjustment

1. Warm up the receiver for at least 20 minutes.
2. Plug in the CRT deflection yoke and tighten the clamp screw.
3. Plug the convergence yoke into the CRT and set in as shown in Fig. 4-2.
4. Input a black and white signal.
5. Fully demagnetize the receiver by applying an external degaussing coil.
6. Turn the CONTRAST and BRIGHTNESS controls to maximum.
7. Loosen the clamp screw holding the yoke. Slide the yoke backward or forward to provide vertical green belt. (Fig. 4-3).
8. Tighten the convergence yoke.
9. Slowly move the deflection yoke forward, and adjust for the best overall green screen.
10. Temporarily tighten the deflection yoke.
11. Produce blue and red rasters by adjusting the low-light controls. Check for good purity in each field.
12. Tighten the deflection yoke.

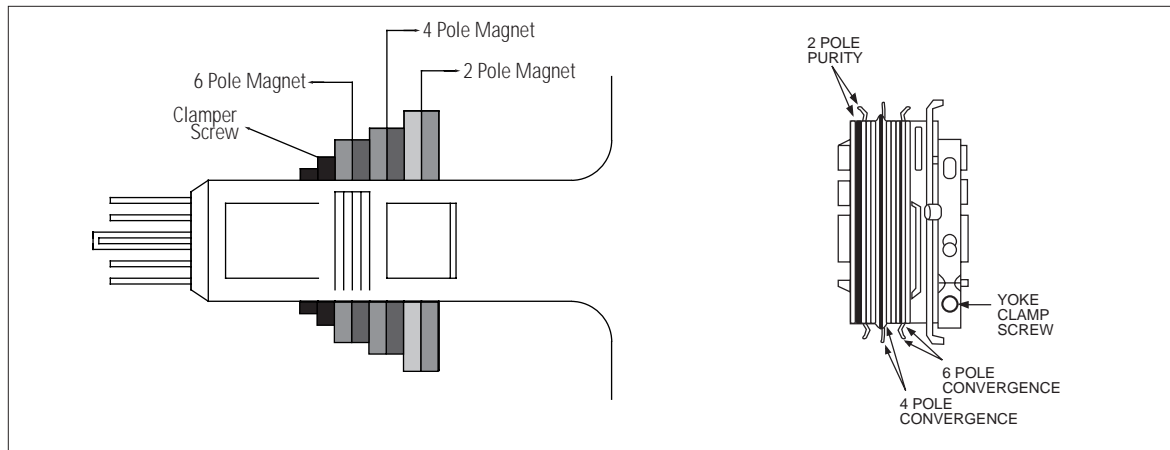


Fig. 4-2 Convergence Magnet Assembly

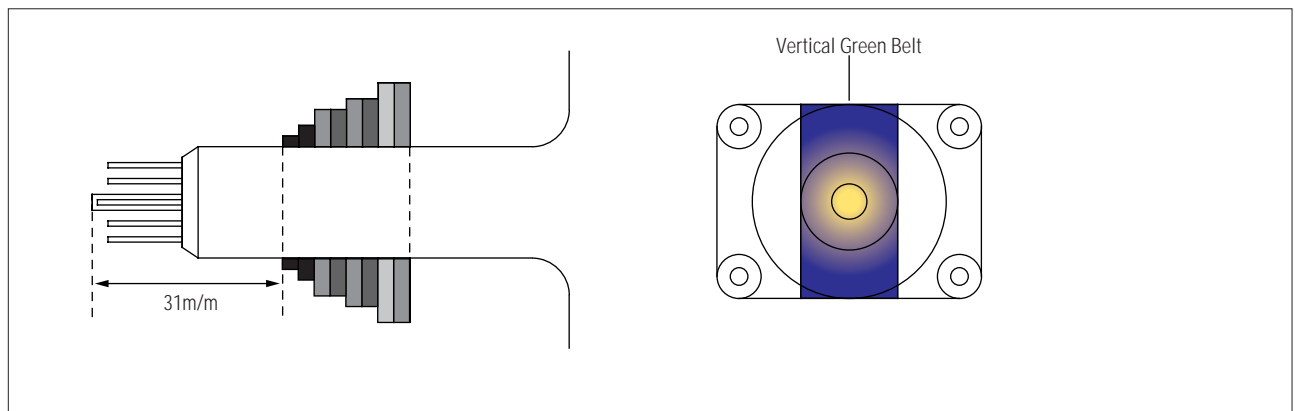


Fig. 4-3 Center Convergence Adjustment

#### 4-3-7 White Balance Adjustment

##### (a) Set up

1. Warm up the TV for at least 30 minutes in the White Pattern.
2. Input a Toshiba pattern.

##### (b) High-Light Adjustment

Set SCT to  $40 \pm 5$  fL in the Factory Service Mode with using CA100. (See Fig. 4-4 ①)

##### (c) Low-Light Adjustment

Set SBT to  $1.5 \pm 0.2$  fL in the Factory Service Mode with using CA100. (See Fig. 4-4 ②)

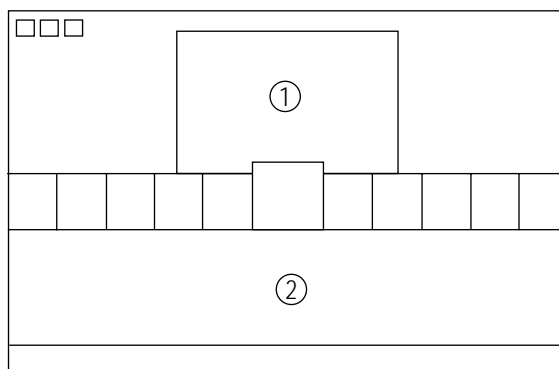


Fig. 4-4

### 4-3-8 Center Convergence Adjustment

1. Warm up the receiver for at least 20 minutes.
2. Adjust the two tabs of the 4 pole magnets to change the angle between them. Superimpose the red and blue vertical lines in the center area of the screen.
3. Adjust the Brightness and Contrast controls for a well defined picture.
4. Adjust the two-tab pairs of the 4 pole magnets, and change the angle between them. Superimpose the red and the blue vertical lines in the center area of the screen.
5. Turn the both tabs at the same time, keeping the angle constant, and superimpose the red and blue horizontal line in the center of the screen.
6. Adjust the two-tab pairs of the 6-pole magnets to superimpose the red and blue line onto the green. (Changing the angle affects the vertical lines, and rotating both magnets affects the horizontal lines.)
7. Repeat adjustments 2~6, if necessary.
8. Since the 4-pole magnets and 6-pole magnets interact, the dot movement is complex (Fig. 4-5).



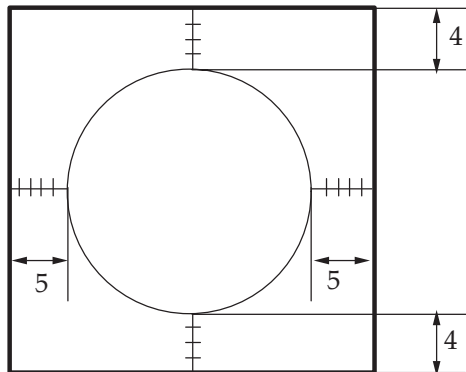
Fig. 4-5 Center Convergence Adjustment

### 4-3-9 RF AGC Adjustment

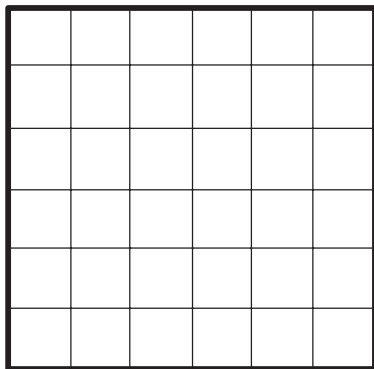
1. Tune to the strongest local station.
2. Enter the Factory Service Mode to make adjustments.
3. Adjust the AGC control until noise(snow) disappears from the screen.

### 4-3-10 Geometry Adjustment

1. Input a lion head pattern.
2. Adjust PVS so that the picture is vertically centered.
3. Adjust with PVA so that the top and bottom margins of the picture are 4.
4. Adjust PHS so that the picture is horizontally centered.
5. Adjust with PEW so that the left and right margins of the picture are 5.

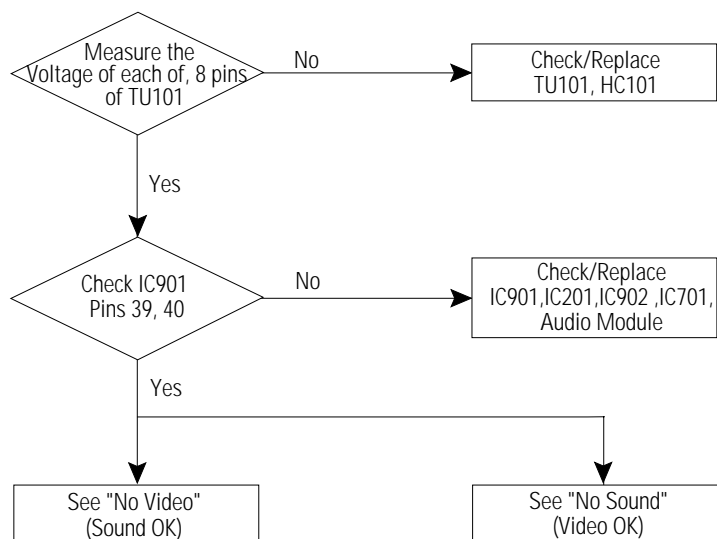


6. Input a crosshatch pattern.
7. Adjust PEP, PEC , PET for vertical linearity.



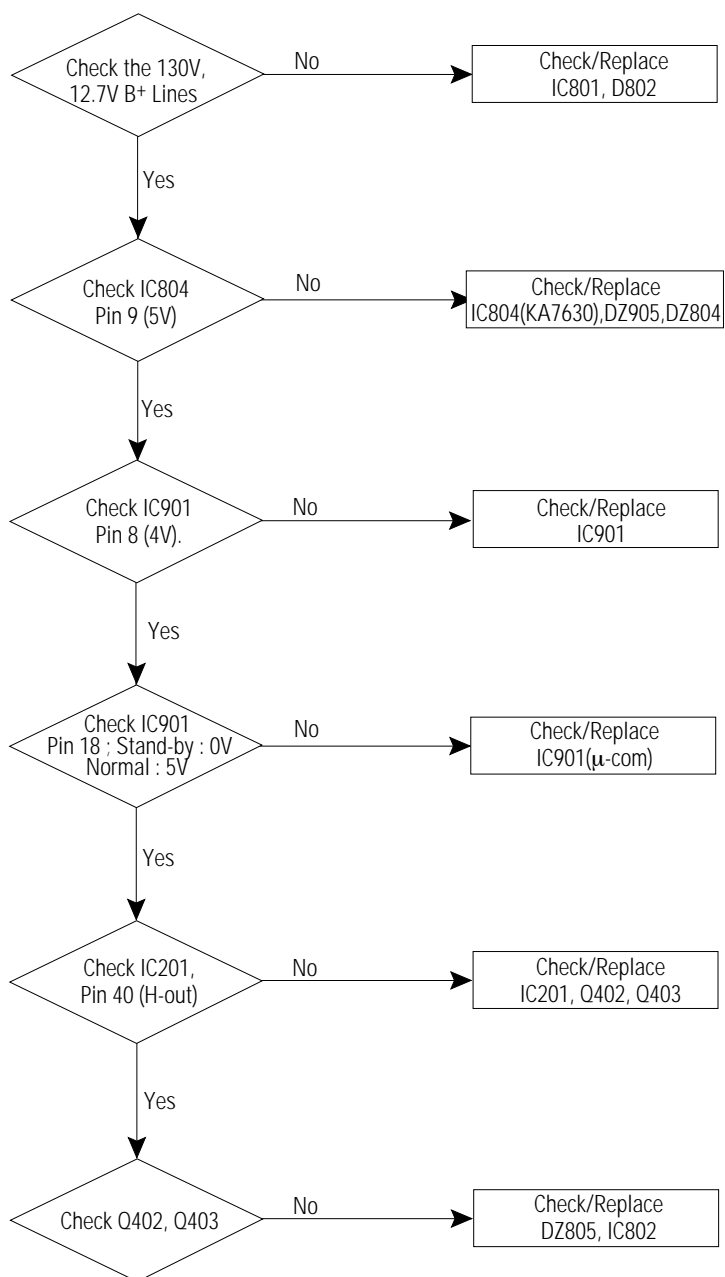
## 5. Troubleshooting

### 5-1 No Video (Raster On, No Sound)

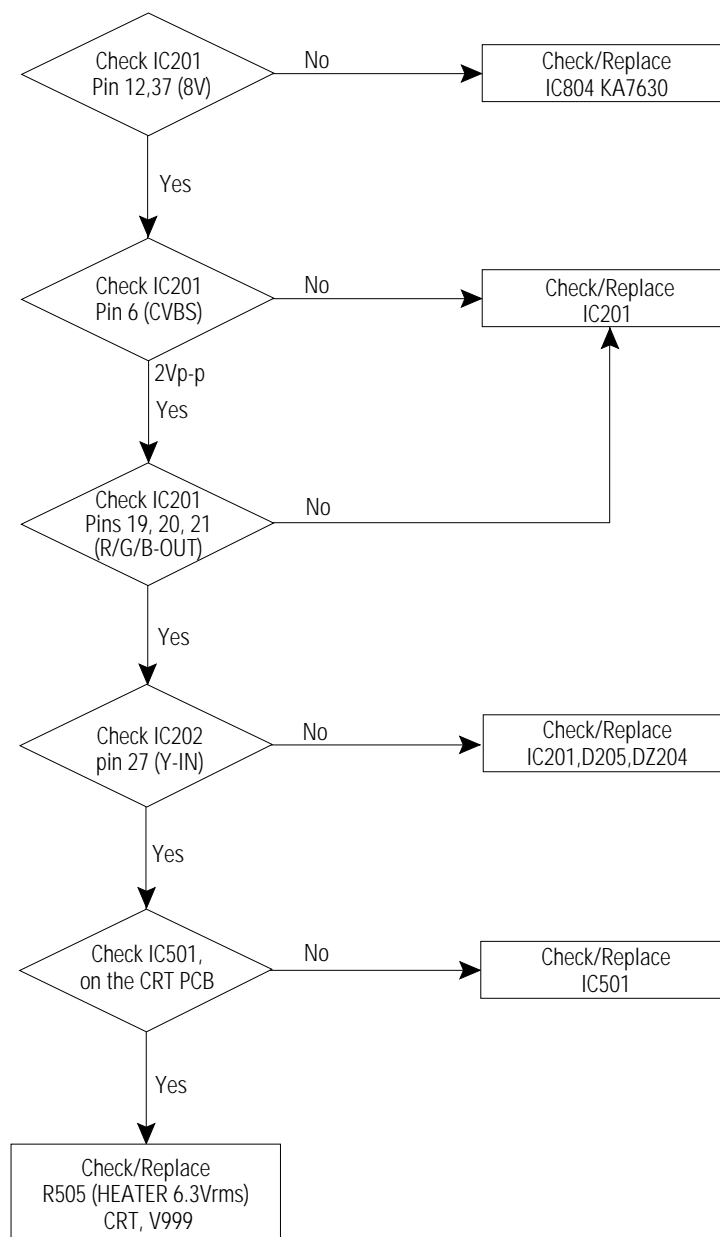




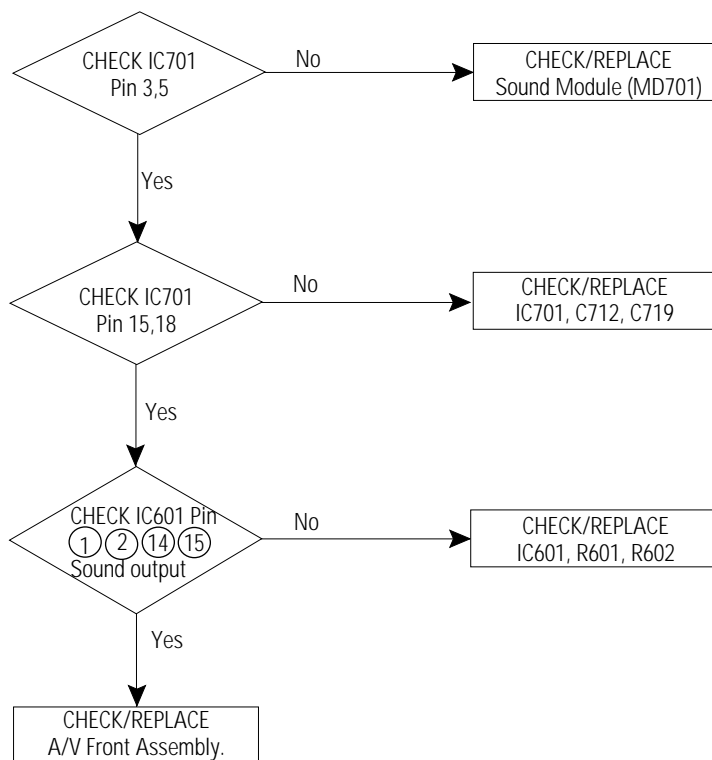
## 5-2 No Power



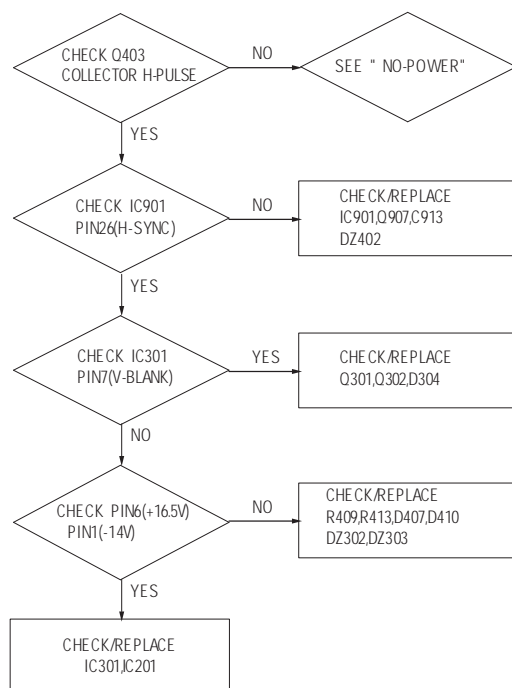
## 5-3 No Video (Sound OK)



## 5-4 No Sound (Video OK)



## 5-5 Power OFF/ON (Repeatedly)



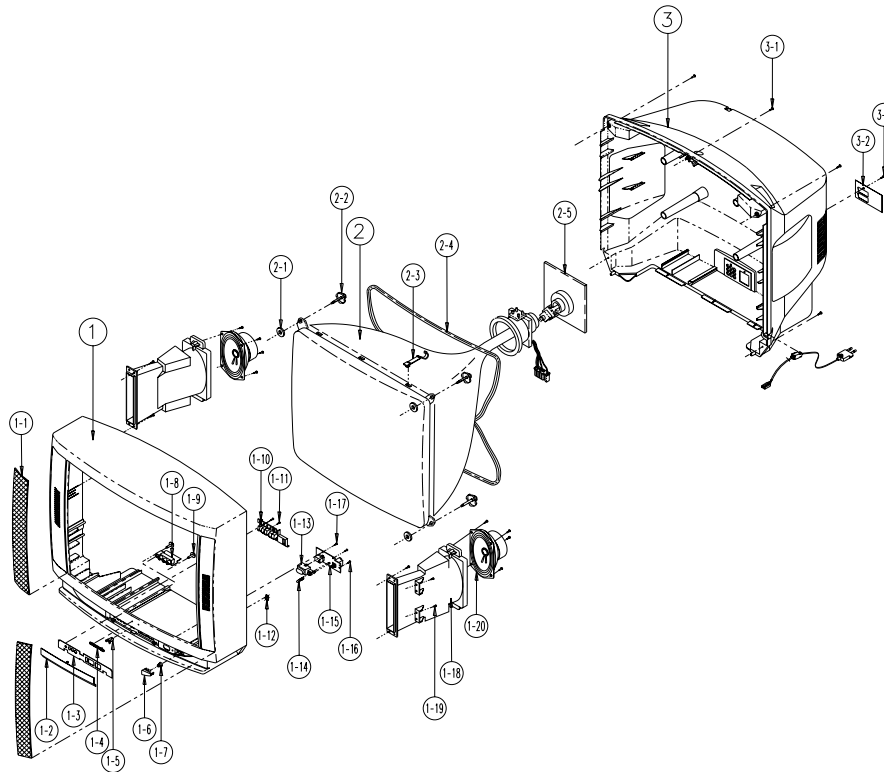
## 5-6 SMPS (Power Supply) Does Not Function

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- (1) When F802 is open:  
Check/Replace F802 , IC 801 , D802.
- (2) When F802 is okay, but SMPS does not function:  
Check/Replace DZ801 , DZ808 , IC 802 , DZ805.
- (3) Others: See "5. Troubleshooting"

## 6. Exploded View & Parts List


### 6-1 CK6202X3X/BWT



No	Code No	Description	Specification	Q'ty	Remark
1	AA91-00067A	ASSY-CABINET,FRONT	-CK6202SXR,S1000 MLB TVI BWT,HB	1	
	AA64-31156H	CABINET-FRONT-	,CK6202SXR,S1000 MLB BWT TVI,HIPS,HB	1	
1-1	AA63-50064A	GRILLE-SHEET	-6202,S1300,PS,T0.4,-,-	2	
1-2	AA64-50111A	DOOR-CONTROL	-62.7202,S1000,HIPS,HB,BLK,-	1	
1-3	AA64-60274D	INLAY-CONTROL	6202,MVV,PS,T0.3,BLK,-,-	1	
1-4	AA64-70011B	BADGE-BRAND	AL,SS R2000 25,SILVER,L60,-,-	1	
1-5	AA61-30001A	LATCH-DOOR	-,-,-,KIFUCO LA701,-	1	
1-6	AA64-10166A	KNOB-POWER,M	-62.7202,-ABS,HB,BLK	1	
1-7	AA61-60005K	SPRING-CS	-SUS304,0.6,OD12.2,H13,N4,-,-	1	
1-8	AA95-00004A	ASSY-PCB,A/V SIDE	-566B-569B,S51A,PAL,-,-	1	
1-9	AA60-10002A	SCREW-TAPPING	RH,+,M4,L12,ZPC(YEL)-,OD14	2	
1-10	AA64-10058A	KNOB-CONTROL	-62.7202,-ABS,HB,BLK	1	
1-11	6002-000514	SCREW-TAPPING	RH,+,2,M4,L15,ZPC(BLK),SWRCH18	2	
1-12	AA64-40238A	INDICATOR-LED	-62.7202,-ACRYL,-,-,-	1	
1-13	AA64-40060A	WINDOW-REMOCON	-62.7202,LG41338,ABS,HB,-,-	1	
1-14	0601-000198	LED	ROUND,RED/GRN,5.0mm,630/565nm	1	
1-15	AA95-30002B	ASSY-PCB,CONTROL	-SCT12B,-,-	1	
1-16	6001-000677	SCREW-MACHINE	RH,+,M3,L6,ZPC(YEL),SM20C,-	1	
1-17	6001-000677	SCREW-MACHIN	ERH,+,M3,L6,ZPC(YEL),SM20C,-	2	
1-18		ASSY-HOLDER,SPK OPTION			
1-19	6002-000522	SCREW-TAPPING	TH,+,2,M4,L15,ZPC(BLK),SWRCH18	8	
1-20	AA91-60003A	ASSY-HOLDER,SPK	-PP,-,-,8ohm 10W,CT2199	1	
2	AA03-10023R	CRT-COLOR	-A59KPR84X01(DB),+500mG,25,1	1	
2-1	AA63-60004P	SPACER-GUM,CRT	NTR RUBBER,T2,GRY,-,-,-	4	
2-2	AA60-10050Q	SCREW-ASSY	WC,HH,+,M5,L26.5,SWRCH18A,ZPC(	4	
2-3	AA65-30113A	CLAMP-D,COIL	NYLON 66,V2,BLK,TVI 25-29,-,-	4	
2-4	AA27-20004G	COIL-DEGAUSSING	-25,16.9ohm,35T,L2600,E	1	
2-5	3704-001105	SOCKET-CRT	11P,20PI,26.5PI,NI,-	1	
3	AA64-30641D	CABINET-BACK	-6202,-HIPS,V2,BLK,-,-	1	
3-1	AA60-10050T	SCREW-TAPPING	RH,+,2S,M4,L20,ZPC(BLK),SWRCH1	7	
3-2	AA64-60052C	INLAY-BACK	-S51A SCART(2),PS,T0.5,BLK,-,-	1	
3-3	6002-000512	SCREW-TAPPING	RH,+,2,M4,L12,ZPC(BLK),SWRCH18	1	

## 7. Electric Parts List

### 7-1 CK6202X3S/NWT (CK6202X3X AND CK6202X3S Dissimilar Parts)

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
<b>ASSY-PCB,MAIN(OPT)</b> BUYER : SRSC				<b>ASSY-ACCESSORY</b>			
*	AA94-00485A	ASSY-PCB,MAIN(OPT);CK6202X3S/NWT,S51A,N-RUSSIA,-			AA68-00044A	MANUAL-USERS:S51A,N-RUS,-,B5,W/P100(G),-	
<b>ASSY-PCB,A/V FRONT</b>				<b>ASSY-CABINET;6202,CK6202X3S/NWT</b>			
*	AA95-00031A	ASSY-PCB,A/V FRONT;DP,22,77,02,3399,S51A,-,-,-		*	AA91-10287H	ASSY-CABINET,FRONT;DP,CK6202SXR,S1000 MLB NWT TVI AA64-31156G CABINET-FRONT;-CK6202SXR,S1000 MLB NWT TVI,HIPS,H	
<b>ASSY-PCB,CONTROL</b>				CB+21	6003-001019	SCREW-TAPTITE:RH,+,B,M4,L12,ZPC(BLK),SWRCH18	
*	AA95-00113A	ASSY-PCB,CONTROL;DP,S51A,02		CB+CF	6003-001025	SCREW-TAPTITE:RH,+,B,M4,L20,ZPC(BLK),SWRCH18	
<b>ASSY-CRT</b>				PA+CF	6003-001024	SCREW-TAPTITE:RWH,+,B,M4,L12,ZPC(YEL),SWRCH1	
				PC+CF	6003-001026	SCREW-TAPTITE:RH,+,B,M4,L15,ZPC(BLK),SWRCH18	
	AA03-10016N	CRT-COLOR:-,A59KPR84X01(DB),+380mG,25,1					

### 7-2 CK6202X3X/BWT Parts List

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
<b>ASSY-PCB,MAIN(OPT)</b> BUYER : SRSC							
*	AA94-00488A	ASSY-PCB,MAIN(OPT);CK6202X3X/BWT,S51A,CIS,-		C232	2202-000796	C-CERAMIC,MLC-AXIAL:1nF,10%,50V,Y5P,TP,3.5X1.9MM,-	
C102	2401-002594	C-AL:220uF,20%,16V,GP,TP,8x11.5,5		C233	2309-000138	C-FILM,PE-PPF:100nF,5%,50V,TP,20x16x8.5,7.5m	
C103	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C234	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm	
C104	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C235	2202-000849	C-CERAMIC,MLC-AXIAL:18pF,5%,50V,CH,TP,3.5x1.9,-	
C105	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C236	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C106	2401-001082	C-AL:330nF,20%,50V,GP,TP,5x11.5		C237	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C107	2401-000914	C-AL:22uF,20%,16V,GP,TP,5x11.5		C238	2301-000383	C-FILM,PEF:10nF,5%,50V,TP,6x7x3.2mm,5mm	
C109	2202-000796	C-CERAMIC,MLC-AXIAL:1nF,10%,50V,Y5P,TP,3.5X1.9MM,-		C239	2301-000445	C-FILM,PEF:4.7nF,5%,50V,TP,5.5x7x3mm,5mm	
C207	2401-001026	C-AL:3.3uF,20%,50V,GP,TP,5X11.5		C240	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11.5	
C210	2306-000122	C-FILM,MPPF:100nF,5%,50V,TP,7.3x4.0x5.0mm,		C241	2401-000603	C-AL:1uF,20%,50V,GP,TP,5x11.5	
C211	2401-002619	C-AL:47uF,20%,25V,GP,TP,5x11.5		C242	2202-000183	C-CERAMIC,MLC-AXIAL:2.2nF,20%,16V,Y5R,TP,3.5X1.9MM,	
C213	2301-000224	C-FILM,PEF:22nF,5%,50V,TP,7.4x3.9x13mm,5m		C243	2401-000603	C-AL:1uF,20%,50V,GP,TP,5x11.5	
C214	2401-000660	C-AL:2.2uF,20%,50V,GP,TP,5x11.5		C244	2301-000224	C-FILM,PEF:22nF,5%,50V,TP,7.4x3.9x13mm,5m	
C215	2305-000412	C-FILM,MPEF:470nF,5%,63V,TP,-,5mm		C245	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C216	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11.5		C301	2301-000254	C-FILM,PEF:39nF,5%,50V,TP,7.5x3.5x6.5mm,5	
C217	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,		C302	2401-000360	C-AL:100uF,20%,50V,GP,TP,8x11.5,5	
C218	2305-000411	C-FILM,MPEF:470nF,5%,50V,TP,7.3x4.8x5.5mm,		C303	2201-000259	C-CERAMIC,DISC:180pF,10%,500V,Y5P,TP,6x4.5	
C219	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11.5		C304	2305-000285	C-FILM,MPEF:220nF,5%,100V,TP,10.5X5.5X15MM,5	
C220	2401-000302	C-AL:100uF,20%,25V,GP,TP,6.3x11.5		C305	2305-001011	C-FILM,MPEF:22nF,5%,100V,TP,3.5x12.5x7.5mm	
C221	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm		C306	2305-000149	C-FILM,MPEF:100nF,5%,100V,TP,12x12.5x6.5,5	
C222	2305-000412	C-FILM,MPEF:470nF,5%,63V,TP,-,5mm		C307	2401-000360	C-AL:100uF,20%,50V,GP,TP,8x11.5,5	
C223	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C308	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11.5	
C224	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C309	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11.5	
C225	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C403	2401-000901	C-AL:22uF,20%,160V,GP,TP,10x20,5	
C226	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11.5		C404	2201-000291	C-CERAMIC,DISC:1nF,10%,500V,Y5P,TP,8.5x5MM,5	
C227	2201-000986	C-CERAMIC,DISC:12pF,5%,50V,NPO,TP,5x3mm,2.5mm		C405	2401-002268	C-AL:2.2uF,20%,250V,LZ,TP,8X11.5	
C228	2201-000273	C-CERAMIC,DISC:18pF,5%,50V,CH,TP,5x3mm,5		C406	2306-000272	C-FILM,MPPF:820nF,5%,400V,BK,29x25.5x18.5,	
C229	2301-000356	C-FILM,PEF:47nF,5%,50V,TP,7.5x4.0x6.5,5mm		C407	2201-000984	C-CERAMIC,DISC:680pF,10%,2KV,Y5P,TP,11x6,7.5m	
C230	2301-000192	C-FILM,PEF:1nF,5%,50V,TP,5.3x10mm,5mm		C408	2305-000382	C-FILM,MPEF:4.7nF,5%,400V,TP,-,5mm	
C231	2202-000183	C-CERAMIC,MLC-AXIAL:2.2nF,20%,16V,Y5R,TP,3.5X1.9MM,		C409	2201-000551	C-CERAMIC,DISC:470pF,10%,1KV,Y5P,TP,8x5,5	
				C410	2401-001397	C-AL:470uF,20%,25V,GP,TP,10x16,5	
				C411	2305-000178	C-FILM,MPEF:10nF,5%,100V,TP,-,5mm	
				C412	2201-000599	C-CERAMIC,DISC:560pF,10%,500V,Y5P,TP,7x4,5	
				C413	2401-000302	C-AL:100uF,20%,25V,GP,TP,6.3x11.5	

## Electric Parts List

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
C414	2306-000329	C-FILM,MPPF:7nF,3%,1.6KV,TP,28.5x18.5x11mm		C830	2401-000611	C-AL:1uF,20%,50V,WT,TP,5x11,5	
C415	2306-000322	C-FILM,MPPF:12nF,5%,1.6KV,TP,29x20.5x13,20		C831	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11,5	
C416	2301-001258	C-FILM,PPF:39nF,5%,400V,TP,19.5x9x15,7.5		C832	2401-0001840	C-AL:100uF,20%,16V,GP,TP,6.3x11,5	
C417	2306-000102	C-FILM,MPPF:1.2uF,5%,250V,TP,29*31*14.5,20		C833	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11,5	
C418	2201-000556	C-CERAMIC,DISC:470pF,10%,500V,Y5P,TP,7x4,5		C835	2401-002286	C-AL:470uF,20%,16V,WT,TP,10x12.5,5	
C419	2401-001397	C-AL:470uF,20%,25V,GP,TP,10x16,5		C901	2201-000234	C-CERAMIC,DISC:150pF,5%,50V,CH,TP,9.5x3,5	
C421	2401-002619	C-AL:47uF,20%,25V,GP,TP,5x11,5		C902	2301-000108	C-FILM,PEF:1.5nF,5%,50V,TP,6.5x3.0x5.5mm,	
C422	2306-000122	C-FILM,MPPF:100nF,5%,50V,TP,7.3x4.0x5.0mm,		C903	2201-000119	C-CERAMIC,DISC:100nF,+80-20%,50V,Y5V,TP,8x3.5	
C423	2201-000556	C-CERAMIC,DISC:470pF,10%,500V,Y5P,TP,7x4,5		C904	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11,5	
C424	2401-001527	C-AL:47uF,20%,250V,HR,TP,13x25mm,5m		C905	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C425	2305-000154	C-FILM,MPEF:100nF,5%,400V,TP,21.5x6.5x11.5		C906	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C427	2201-002041	C-CERAMIC,DISC:820pF,10%,2KV,Y5P,TP,12x6,7.5m		C907	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C504	2202-000862	C-CERAMIC,MLC-AXIAL:390pF,10%,50V,Y5P,TP,3.5x1.9,-		C908	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C506	2301-000213	C-FILM,PEF:220nF,5%,250V,TP,21.5x11,7.5		C909	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C510	2401-000430	C-AL:10uF,20%,250V,GP,TP,10x16mm,5m		C910	2202-000796	C-CERAMIC,MLC-AXIAL:1nF,10%,50V,Y5P,TP,3.5X1.9MM,-	
C520	2401-001232	C-AL:4.7uF,20%,250V,GP,TP,10x12.5,5		C911	2202-000796	C-CERAMIC,MLC-AXIAL:1nF,10%,50V,Y5P,TP,3.5X1.9MM,-	
C530	2201-002063	C-CERAMIC,DISC:10nF,+80-20%,3KV,Y5V,TP,16x5,7		C913	2301-000445	C-FILM,PEF:4.7nF,5%,50V,TP,5.5x7x3mm,5mm	
C601	2401-001914	C-AL:1uF,20%,50V,BP,TP,5x11,5		C914	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11,5	
C602	2301-000445	C-FILM,PEF:4.7nF,5%,50V,TP,5.5x7x3mm,5mm		C915	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11,5	
C603	2401-001333	C-AL:470nF,20%,50V,GP,TP,5x11,5		C916	2201-000980	C-CERAMIC,DISC:30pF,5%,50V,CH,TP,5.0x3.0,5mm	
C604	2301-000192	C-FILM,PEF:1nF,5%,50V,TP,5.3x10mm,5mm		C917	2201-000980	C-CERAMIC,DISC:30pF,5%,50V,CH,TP,5.0x3.0,5mm	
C605	2401-001914	C-AL:1uF,20%,50V,BP,TP,5x11,5		C918	2301-000192	C-FILM,PEF:1nF,5%,50V,TP,5.3x10mm,5mm	
C606	2301-000445	C-FILM,PEF:4.7nF,5%,50V,TP,5.5x7x3mm,5mm		C919	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C607	2401-001998	C-AL:1000uF,20%,25V,GP,TP,10x20,5mm		C920	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11,5	
C701	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.		C921	2202-000796	C-CERAMIC,MLC-AXIAL:1nF,10%,50V,Y5P,TP,3.5X1.9MM,-	
C702	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11,5		C923	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C703	2202-000243	C-CERAMIC,MLC-AXIAL:33pF,5%,50V,SL,TP,3.5x19,-		C924	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11,5	
C705	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm		C925	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C707	2401-000302	C-AL:100uF,20%,25V,GP,TP,6.3x11,5		C926	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C709	2306-000122	C-FILM,MPPF:100nF,5%,50V,TP,7.3x4.0x5.0mm,		C927	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C710	2401-000302	C-AL:100uF,20%,25V,GP,TP,6.3x11,5		C928	2401-001333	C-AL:470nF,20%,50V,GP,TP,5x11,5	
C711	2401-002235	C-AL:10uF,20%,16V,GP,TP,5x11mm,5mm		CE01	2401-002597	C-AL:220uF,20%,35V,GP,TP,10x12.5,5	
C712	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11,5		CE02	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C713	2301-000247	C-FILM,PEF:33nF,5%,50V,TP,8.1x4.5x13mm,5m		CE03	2305-000470	C-FILM,MPEF:68nF,5%,100V,TP,-,5mm	
C714	2301-000289	C-FILM,PEF:5.6nF,5%,50V,TP,7x6x3,5		CN501B	AA39-20604ALEAD CONNECTOR-ASSY:-,YBNH250-09,YBNH05/04,5/4P,5		
C715	2401-000647	C-AL:2.2uF,20%,50V,BP,TP,5x11,5		CN602	3711-002644	CONNECTOR-HEADER:BOX,5P,1R,2.5mm,STRAIGHT,SN	
C716	2401-000647	C-AL:2.2uF,20%,50V,BP,TP,5x11,5		CN701	3711-002647	CONNECTOR-HEADER:BOX,8P,1R,2.5mm,STRAIGHT,SN	
C717	2301-000289	C-FILM,PEF:5.6nF,5%,50V,TP,7x6x3,5		CN802	AA27-20004G COIL-DEGAUSSING:-,25,16.9ohm,35T,L2600,E		
C718	2301-000247	C-FILM,PEF:33nF,5%,50V,TP,8.1x4.5x13mm,5m		CN901A	3711-002643	CONNECTOR-HEADER:BOX,4P,1R,2.5mm,STRAIGHT,SN	
C719	2401-000480	C-AL:10uF,20%,50V,GP,TP,5x11,5		CN902	3711-002644	CONNECTOR-HEADER:BOX,5P,1R,2.5mm,STRAIGHT,SN	
C720	2401-002235	C-AL:10uF,20%,16V,GP,TP,5x11mm,5mm		CT01	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C721	2301-000175	C-FILM,PEF:15nF,5%,50V,TP,7.1x3.5x13mm,5m		CT02	2401-000242	C-AL:100uF,20%,10V,GP,TP,5x11,5	
C722	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm		CT03	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C723	2301-000175	C-FILM,PEF:15nF,5%,50V,TP,7.1x3.5x13mm,5m		CT04	2202-002037	C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.	
C725	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm		CT05	2202-000164	C-CERAMIC,MLC-AXIAL:-,18nF,10%,50V,Y5P,TP,3.5X1.9MM,	
C727	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm		CT06	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11,5	
C730	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP,3.5x19,-		CT07	2301-000235	C-FILM,PEF:3.9nF,5%,50V,TP,6.5x3.0x5.5mm,	
C731	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP,3.5x19,-		CT08	2401-001914	C-AL:1uF,20%,50V,BP,TP,5x11,5	
C732	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP,3.5x19,-		CT09	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
C733	2202-000231	C-CERAMIC,MLC-AXIAL:330pF,10%,50V,Y5P,TP,3.5x19,-		CW701	2503-000161	C-NETWORK:330pFx8,20%,50V,MCCB1H331MX8YT	
C801	2306-000321	C-FILM,MPPF:470nF,5%,275V,TP,-,22.5		CW901	2503-000156	C-NETWORK:100pFx4,20%,50V	
C802	2306-000321	C-FILM,MPPF:470nF,5%,275V,TP,-,22.5		D201	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C804	2201-000332	C-CERAMIC,DISC:2.2nF,20%,250VAC,Y5U,TP,11x7,7		D202	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C805	2201-000332	C-CERAMIC,DISC:2.2nF,20%,250VAC,Y5U,TP,11x7,7		D203	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C806	2401-003031	C-AL:470uF,20%,450V,GP,BK,35x45mm,1		D204	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C807	2303-000163	C-FILM,PPF:2.2nF,5%,800V,TP,15x13x8.5,7.5		D205	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C808	2401-002292	C-AL:47uF,20%,25V,WT,TP,8X11,5		D209	0402-000216	DIODE-RECTIFIER:ERC24-06,600V,1.0A,DO-204	
C809	2301-000224	C-FILM,PEF:22nF,5%,50V,TP,7.4x3.9x13mm,5m		D210	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C811	2301-000310	C-FILM,PEF:68nF,5%,50V,TP,8.0X8.5X4.0X5.5		D217	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C812	2201-002002	C-CERAMIC,DISC:4700pF,20%,400V,+20%~-55%,TP,2		D301	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP	
C813	2201-002002	C-CERAMIC,DISC:4700pF,20%,400V,+20%~-55%,TP,2		D302	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C814	2201-000683	C-CERAMIC,DISC:850pF,10%,1KV,Y5P,TP,10x5,5		D303	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C815	2401-003026	C-AL:330uF,20%,200V,GP,ST,22x35,10		D304	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C816	2401-000293	C-AL:100uF,+30-10%,200V,GP,TP,16x25		D401	0402-000493	DIODE-RECTIFIER:1R5GU41,400V,1.5A,DO-15L,TP	
C817	2201-000599	C-CERAMIC,DISC:560pF,10%,500V,Y5P,TP,7x4,5		D402	0402-000132	DIODE-RECTIFIER:1N4004,400V,1A,DO-41,TP	
C818	2401-000722	C-AL:2200uF,20%,25V,WT,TP,16x25,7.5		D403	0402-000132	DIODE-RECTIFIER:1N4004,400V,1A,DO-41,TP	
C819	2201-000599	C-CERAMIC,DISC:560pF,10%,500V,Y5P,TP,7x4,5		D404	0402-001012	DIODE-RECTIFIER:FMP-3FU,1500V,5A,TO-3PF	
C820	2401-000722	C-AL:2200uF,20%,25V,WT,TP,16x25,7.5		D406	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP	
C821	2301-000192	C-FILM,PEF:1nF,5%,50V,TP,5.3x10mm,5mm		D407	0402-000216	DIODE-RECTIFIER:ERC24-06,600V,1.0A,DO-204	
C822	2201-000599	C-CERAMIC,DISC:560pF,10%,500V,Y5P,TP,7x4,5		D410	0402-000493	DIODE-RECTIFIER:1R5GU41,400V,1.5A,DO-15L,TP	
C823	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11,5		D507	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP	
C824	2305-000289	C-FILM,MPEF:220nF,5%,63V,TP,-,5mm		D508	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP	
C825	2306-000122	C-FILM,MPPF:100nF,5%,50V,TP,7.3x4.0x5.0mm,		D509	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP	
C826	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11,5		D520	0402-000132	DIODE-RECTIFIER:1N4004,400V,1A,DO-41,TP	
C827	2401-002235	C-AL:10uF,20%,16V,GP,TP,5x11mm,5mm		D601	0403-000296	DIODE-ZENER:MTZ5.6B,5.6V,5.45-5.73V,500mW,	
C828	2401-000493	C-AL:10uF,20%,50V,LZ,TP,5x11mm,5mm		D602	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
C829	2401-000302	C-AL:100uF,20%,25V,GP,TP,6.3x11,5		D801	0402-000213	DIODE-RECTIFIER:ERB12-06,600V,1.0A,DO-41,TP	

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
D802	0402-001160	DIODE-BRIDGE:D5SB60,600V,2.8A,SIP-4,ST		L202	2701-000197	INDUCTOR-AXIAL:5.6uH,10%,2.5x3.4mm	
D803	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP		L205	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
D804	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L206	2701-000142	INDUCTOR-AXIAL:1uH,10%,2.5x3.4mm	
D805	0402-000231	DIODE-RECTIFIER:FMG-G26S,600V,4A,TO-220F,ST		L207	2701-000142	INDUCTOR-AXIAL:1uH,10%,2.5x3.4mm	
D806	0402-000493	DIODE-RECTIFIER:1R5GU41,400V,1.5A,DO-15L,TP		L208	2701-000142	INDUCTOR-AXIAL:1uH,10%,2.5x3.4mm	
D807	0402-000233	DIODE-RECTIFIER:FML-G12S,200V,5A,-,TP		L303	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
D808	0402-000132	DIODE-RECTIFIER:1N4004,400V,1A,DO-41,TP		L401	AA27-40003H	COIL-HORIZ,WIDTH:-,2mH,DR15x20,2UEW0.35,ST	
D809	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L402	AA27-30003G	COIL-LINERITY:-,44uH,DR14x15,PIO.2x10,18x33,	
D810	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L403	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
D813	0402-000493	DIODE-RECTIFIER:1R5GU41,400V,1.5A,DO-15L,TP		L404	AA27-40003L	COIL-HORIZ,WIDTH:-,1.0mH,DR14x20,2UEW0.45,ST	
D901	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L501	2901-000297	FILTER-EMI ON BOARD:-,3A,-,3.5x5,TP,-	
D906	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L601	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
D907	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L603	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
DE01	0402-001105	DIODE-RECTIFIER:ERB43-04SV1,400V,1.0A,-,TP		L701	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DT01	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L702	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DT02	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L703	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DT05	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP		L704	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DV801	1405-000187	VARISTOR:750V,1250A,12.5x7mm,TP		L705	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DV802	1405-000187	VARISTOR:750V,1250A,12.5x7mm,TP		L706	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ201	0403-000297	DIODE-ZENER:MTZ6.2B,6.2V,5.96-6.27V,500mW,		L707	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ202	0403-000297	DIODE-ZENER:MTZ6.2B,6.2V,5.96-6.27V,500mW,		L708	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ203	0403-000298	DIODE-ZENER:MTZ6.8C,6.8V,6.66-7.01V,500mW,		L709	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ204	0403-000662	DIODE-ZENER:MTZ3.0B,3.0V,3.01-3.22V,500mW,		L801	AA29-30002F	FILTER-LINE NOISE:-,6mH,2.45A,-,TP,-	
DZ205	0403-000551	DIODE-ZENER:MTZ3.9B,3.9V,3.89-4.16V,500mW,		L802	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
DZ206	0403-000294	DIODE-ZENER:MTZ4.7B,4.7V,4.55-4.80V,500mW,		L803	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
DZ210	0403-000659	DIODE-ZENER:MTZ2.0A,2V,1.88-2.10V,500mW,DO		L804	2901-000299	FILTER-EMI ON BOARD:-,6A,UL/CSA,-,9x7.5,TP,-	
DZ302	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		L805	2701-001032	INDUCTOR-AXIAL:100uH,10%,5x14mm	
DZ303	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		L806	2901-000297	FILTER-EMI ON BOARD:-,3A,-,3.5x5,TP,-	
DZ304	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		L807	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
DZ305	0403-000494	DIODE-ZENER:MTZ39,39V,35.36-37.2V,500mW,DO		L808	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G	
DZ306	0403-000700	DIODE-ZENER:TZP33A,33V,31-35V,1W,DO-41,TP		L901	2701-000189	INDUCTOR-AXIAL:470nH,10%,2.5x3.4mm	
DZ402	0403-000300	DIODE-ZENER:MTZ8.2B,8.2V,7.78-8.19V,500mW,		L903	2701-000197	INDUCTOR-AXIAL:5.6uH,10%,2.5x3.4mm	
DZ403	0403-000698	DIODE-ZENER:TPZ12A,12V,11.4-12.6V,1W,DO-41		L904	2701-000211	INDUCTOR-AXIAL:68uH,10%,2.5x3.4mm	
DZ505	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		L905	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ601	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		L906	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ602	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		L907	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
DZ603	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		LT01	2901-000299	FILTER-EMI ON BOARD:-,6A,UL/CSA,-,9x7.5,TP,-	
DZ604	0403-000545	DIODE-ZENER:MTZ24B,24V,22.61-23.77V,500mW,		LT02	2901-000299	FILTER-EMI ON BOARD:-,6A,UL/CSA,-,9x7.5,TP,-	
DZ701	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		Q201	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ702	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		Q202	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ703	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		Q204	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ704	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		Q207	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ705	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		Q210	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ801	0403-000300	DIODE-ZENER:MTZ8.2B,8.2V,7.78-8.19V,500mW,		Q301	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ802	0403-000296	DIODE-ZENER:MTZ5.6B,5.6V,5.45-5.73V,500mW,		Q302	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ803	0403-000296	DIODE-ZENER:MTZ5.6B,5.6V,5.45-5.73V,500mW,		△ Q401	0502-000298	TR-POWER:KSD73,NPN,30W,TO-220,-,120-240	
DZ805	1203-001217	IC-POS,ADJUST REG.:431,TO-92,3P,4.58MIL,PLASTIC,2		△ Q402	0502-001007	TR-POWER:KSC2073-H2,NPN,25W,TO-220,ST,6	
DZ807	0403-000296	DIODE-ZENER:MTZ5.6B,5.6V,5.45-5.73V,500mW,		△ Q403	0502-001136	TR-POWER:KSD5703,NPN,70W,TO-3PF,ST,8-	
DZ808	0403-000562	DIODE-ZENER:MTZ7.5B,7.5V,7.07-7.45V,500mW,		Q701	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ901	1203-000451	IC-VOLTAGE REGULATOR:33,TO-92,3P,-,PLASTIC,31/35V,2		Q702	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZ904	0403-000563	DIODE-ZENER:MTZ9.1B,9.1V,8.57-9.01V,500mW,		Q801	0501-000369	TR-SMALL SIGNAL:KSC2331-Y,NPN,1W,TO-92L,-,120-	
DZ905	0403-000296	DIODE-ZENER:MTZ5.6B,5.6V,5.45-5.73V,500mW,		Q901	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
DZT01	0403-000355	DIODE-ZENER:UZ5.1BSB,5.1V,4.97-5.18V,500mW		Q902	0504-000123	TR-DIGITAL:KSR1010,NPN,300mW,10K,TO-92,TP	
△ F801	3601-000281	FUSE-FERRULE:250V,4A,TL,GLASS,5.2x20mm		Q903	0504-000123	TR-DIGITAL:KSR1010,NPN,300mW,10K,TO-92,TP	
F801A	3602-000114	FUSE-HOLDER:-,30mohm		Q904	0504-000123	TR-DIGITAL:KSR1010,NPN,300mW,10K,TO-92,TP	
F801B	3602-000114	FUSE-HOLDER:-,30mohm		Q905	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
△ F802	3601-001086	FUSE-FERRULE:125V,5A,FA,GLASS,2.4x7.5mm		Q907	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
△ F803	3601-001086	FUSE-FERRULE:125V,5A,FA,GLASS,2.4x7.5mm		Q908	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
GT804A	AA39-20010B	LEAD-CONNECTOR,ASSY:-,YFH800-01,S,1P,500,1617#22		QE01	0501-000283	TR-SMALL SIGNAL:KSA539,PNP,400mW,TO-92,TP,120-	
△ HC101	AA13-20004WIC	HYBRID:-,PAP103T,SIP,6P,PRE-AMP,TP		QT01	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
△ IC201	0904-001294	IC-BUS CONTROLLER:		QT02	0504-000125	TR-DIGITAL:KSR1012,NPN,300mW,47K,TO-92,TP	
△ IC301	1204-000517	IC-VERTICAL DEF.:LA7845,SIP,7P,-,PLASTIC,40V,11		QT03	0501-000389	TR-SMALL SIGNAL:KSC815,NPN,400mW,TO-92,TP,120-	
△ IC501	1201-001330	IC-VIDEO AMP:6108,ZSIP,9P,-,SINGLE,-,PLASTI		R201	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
△ IC601	1201-001064	IC-POWER AMP:7297,ZIP,15P,-,DUAL,32dB,PLAST		R202	2001-000786	R-CARBON:47KOHM,5%,1/8W,AA,TP,-	
△ IC701	1204-000473	IC-AUDIO PROCESSOR:TDA9859,DIP,32P,-,PLASTIC,-,-		R203	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
△ IC801	1203-001482	IC-PWM CONTROLLER:3S1265R,TO-3P,5P,210,PLASTIC,6		R204	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
△ IC802	0604-001038	PHOTO-COUPLER:TR,130-260%,200mW,DIP,4,ST		R212	2001-000005	R-CARBON:390OHM,5%,1/8W,AA,TP,-	
△ IC803	1203-001006	IC-VOLTAGE REGULATOR:78R05,TO-220F,4P,-,PLASTIC,4.8		R214	2001-000793	R-CARBON:470HM,5%,1/8W,AA,TP,-	
△ IC804	1203-000644	IC-POS,FIXED REG.:7630,SIP,10P,-,PLASTIC,5.1/8V,		R215	2001-000780	R-CARBON:470HM,5%,1/8W,AA,TP,-	
△ IC901	AA13-30021MIC	MCU:-,SAA5291PS-135,8bit,SDIP,CK29		R218	2001-000515	R-CARBON:220OHM,5%,1/8W,AA,TP,-	
△ IC902	1103-001105	IC-EEPROM:24C040,4Kx1BIT,DIP,8P,300MIL,1		R219	2001-000343	R-CARBON:130OHM,5%,1/8W,AA,TP,-	
△ ICE01	1201-000191	IC-OP AMP:4558,DIP,8P,300MIL,DUAL,20V/mV		R220	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
J206	3301-000287	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G		R221	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
JA701	3722-000195	JACK-SCART:42P,-,SN,BLK,NO		R222	2701-000142	INDUCTOR-AXIAL:1uH,10%,2.5x3.4mm	
L101	2701-000326	INDUCTOR-AXIAL:560nH,10%,2.3x3.4mm		R223	2001-000617	R-CARBON:3.9MOHM,5%,1/8W,AA,TP,-	
L102	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm		R224	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-	
L103	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm		R225	2001-001026	R-CARBON:910OHM,5%,1/8W,AA,TP,-	



## Electric Parts List

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
R226	2001-000793	R-CARBON:470HM,5%,1/8W,AA,TP,-		R520	2001-001062	R-CARBON(S):10MOHM,5%,1/2W,AA,TP,-	
R230	2001-000331	R-CARBON:12KOHM,5%,1/8W,AA,TP,-		R601	2008-001002	R-FUSIBLE(S):0.18ohm,5%,2W,AA,TP,3.9x10mm	
R233	2001-000780	R-CARBON:470OHM,5%,1/8W,AA,TP,-		R602	2008-001002	R-FUSIBLE(S):0.18ohm,5%,2W,AA,TP,3.9x10mm	
R234	2001-000780	R-CARBON:470OHM,5%,1/8W,AA,TP,-		R603	2001-000472	R-CARBON:2.7KOHM,5%,1/8W,AA,TP,-	
R235	2001-000780	R-CARBON:470OHM,5%,1/8W,AA,TP,-		R604	2001-000331	R-CARBON:12KOHM,5%,1/8W,AA,TP,-	
R237	2001-000007	R-CARBON:3KOHM,5%,1/8W,AA,TP,-		R605	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-	
R238	2001-001110	R-CARBON(S):240KOHM,5%,1/2W,AA,TP,-		R606	2001-000472	R-CARBON:2.7KOHM,5%,1/8W,AA,TP,-	
R239	2001-000008	R-CARBON:15KOHM,5%,1/8W,AA,TP,-		R607	2001-000331	R-CARBON:12KOHM,5%,1/8W,AA,TP,-	
R240	2001-001125	R-CARBON(S):300KOHM,5%,1/2W,AA,TP,-		R701	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
R241	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-		R702	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
R243	2001-000232	R-CARBON:1.3KOHM,5%,1/8W,AA,TP,-		R703	2001-000515	R-CARBON:220OHM,5%,1/8W,AA,TP,-	
R246	2001-000273	R-CARBON:100KOHM,5%,1/8W,AA,TP,-		R704	2001-000515	R-CARBON:220OHM,5%,1/8W,AA,TP,-	
R247	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-		R705	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
R248	2001-000793	R-CARBON:470HM,5%,1/8W,AA,TP,-		R706	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
R249	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-		R707	2001-000515	R-CARBON:220OHM,5%,1/8W,AA,TP,-	
R250	2001-000938	R-CARBON:680HM,5%,1/8W,AA,TP,-		R708	2001-000515	R-CARBON:220OHM,5%,1/8W,AA,TP,-	
R251	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-		R709	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R252	2001-000563	R-CARBON:27KOHM,5%,1/8W,AA,TP,-		R712	2001-000539	R-CARBON:24KOHM,5%,1/8W,AA,TP,-	
R253	2001-000591	R-CARBON:3.3KOHM,5%,1/8W,AA,TP,-		R713	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R255	2001-000008	R-CARBON:15KOHM,5%,1/8W,AA,TP,-		R714	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-	
R256	2004-001234	R-METAL:75Kohm,5%,1/8W,AA,TP,1.8x3.2mm		R715	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R257	2001-000563	R-CARBON:27KOHM,5%,1/8W,AA,TP,-		R716	2001-000660	R-CARBON:33KOHM,5%,1/8W,AA,TP,-	
R258	2004-001914	R-METAL:39Kohm,2%,1/8W,AA,TP,1.8x3.5mm		R717	2001-000539	R-CARBON:24KOHM,5%,1/8W,AA,TP,-	
R259	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-		R718	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R260	2001-001015	R-CARBON:9.1KOHM,5%,1/8W,AA,TP,-		R719	2001-000527	R-CARBON:220OHM,5%,1/8W,AA,TP,-	
R261	2001-000331	R-CARBON:12KOHM,5%,1/8W,AA,TP,-		R720	2001-000387	R-CARBON:16KOHM,5%,1/8W,AA,TP,-	
R262	2001-001015	R-CARBON:9.1KOHM,5%,1/8W,AA,TP,-		R721	2001-000786	R-CARBON:47KOHM,5%,1/8W,AA,TP,-	
R301	2001-001045	R-CARBON(S):1.2KOHM,5%,1/2W,AA,TP,-		R722	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R302	2001-001049	R-CARBON(S):1.3KOHM,5%,1/2W,AA,TP,-		R723	2001-000387	R-CARBON:16KOHM,5%,1/8W,AA,TP,-	
R303	2001-000016	R-CARBON(S):10HM,5%,1/2W,AA,TP,-		R724	2001-000786	R-CARBON:47KOHM,5%,1/8W,AA,TP,-	
R304	2008-000254	R-FUSIBLE(S):0.68ohm,5%,2W,AF,TP,3.9x10mm		R725	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R305	2003-002069	R-METAL OXIDE:470ohm,5%,2W,AF,TP,3.9x10mm		R728	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
R306	2003-002069	R-METAL OXIDE:470ohm,5%,2W,AF,TP,3.9x10mm		R729	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-	
R308	2003-002069	R-METAL OXIDE:470ohm,5%,2W,AF,TP,3.9x10mm		R732	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R309	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-		R733	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R310	2001-000387	R-CARBON:16KOHM,5%,1/8W,AA,TP,-		R734	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R311	2001-000660	R-CARBON:33KOHM,5%,1/8W,AA,TP,-		R735	2001-000969	R-CARBON:750HM,5%,1/8W,AA,TP,-	
R312	2001-000786	R-CARBON:47KOHM,5%,1/8W,AA,TP,-		R736	2001-000660	R-CARBON:33KOHM,5%,1/8W,AA,TP,-	
R313	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-		R740	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
R314	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-		R741	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
R315	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-		R801	2002-001011	R-COMPOSITION:3.3Mohm,10%,1/2W,AA,TP,3.7x9mm	
R316	2001-000660	R-CARBON:33KOHM,5%,1/8W,AA,TP,-		R802	2003-000994	R-METAL OXIDE(S):33Kohm,5%,2W,AF,TP,3.9x10mm	
R317	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-		R803	2003-000994	R-METAL OXIDE(S):33Kohm,5%,2W,AF,TP,3.9x10mm	
R404	2008-001013	R-FUSIBLE(S):1.2ohm,5%,2W,AF,TP,3.9x10mm		R804	2001-001150	R-CARBON(S):470KOHM,5%,1/2W,AA,TP,-	
R405	2001-001138	R-CARBON(S):390OHM,5%,1/2W,AA,TP,-		R805	2001-001150	R-CARBON(S):470KOHM,5%,1/2W,AA,TP,-	
R406	2003-002008	R-METAL OXIDE(S):18Kohm,5%,2W,AF,TP,3.9x10mm		R806	2003-001023	R-METAL OXIDE(S):120ohm,0.05,2W,AF,TP,3.9x10mm	
R407	2003-001025	R-METAL OXIDE(S):15Kohm,5%,2W,AF,TP,3.9x10mm		R807	2001-001178	R-CARBON(S):680OHM,5%,1/2W,AA,TP,-	
R409	2008-000264	R-FUSIBLE(S):1ohm,5%,1W,AF,TP,3.9x10mm		R808	2002-001011	R-COMPOSITION:3.3Mohm,10%,1/2W,AA,TP,3.7x9mm	
R410	2001-001114	R-CARBON(S):270OHM,5%,1/2W,AA,TP,-		R809	2002-001013	R-COMPOSITION:4.7Mohm,10%,1/2W,AA,TP,3.7x9mm	
R411	2001-000022	R-CARBON(S):330HM,5%,1/2W,AA,TP,-		R810	2003-000782	R-METAL OXIDE(S):7.5Kohm,5%,2W,AA,TP,4x12mm	
R412	2001-000020	R-CARBON(S):220HM,5%,1/2W,AA,TP,-		R811	2003-000462	R-METAL OXIDE(S):10Kohm,5%,2W,AA,TP,4x12mm	
R413	2008-000251	R-FUSIBLE(S):0.27ohm,10%,2W,AF,TP,3.9x10mm		R813	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-	
R414	2008-000278	R-FUSIBLE(S):82ohm,5%,2W,AA,TP,3.9x10mm		R814	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
R415	2008-000251	R-FUSIBLE(S):0.27ohm,10%,2W,AF,TP,3.9x10mm		R815	2004-001889	R-METAL(S):127Kohm,1%,1/2W,AA,TP,2.5x6.5mm	
R417	2004-001899	R-METAL(S):61.9Kohm,1%,1/2W,AA,TP,2.5x6.5		R816	2004-001983	R-METAL(S):2.49Kohm,1%,1/2W,AA,TP,2.4x6.4	
R418	2004-001967	R-METAL(S):68Kohm,1%,1/2W,AA,TP,2.5x6.5mm		R817	2001-001153	R-CARBON(S):470HM,5%,1/2W,AA,TP,-	
R419	2004-001390	R-METAL(S):1Kohm,2%,1/2W,AA,TP,2.4x6.4mm		R818	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R420	2001-001114	R-CARBON(S):270OHM,5%,1/2W,AA,TP,-		R819	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R421	2001-001043	R-CARBON(S):0OHM,5%,1/2W,AA,TP,-		R820	2008-001047	R-FUSIBLE(S):68ohm,5%,2W,AF,TP,3.9x10mm	
R422	2008-001013	R-FUSIBLE(S):1.2ohm,5%,2W,AF,TP,3.9x10mm		R821	2008-000271	R-FUSIBLE(S):3.3ohm,5%,2W,AA,TP,3.9x10mm	
R424	2001-001043	R-CARBON(S):0OHM,5%,1/2W,AA,TP,-		R822	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R425	2001-001043	R-CARBON(S):0OHM,5%,1/2W,AA,TP,-		R823	2008-000264	R-FUSIBLE(S):1ohm,5%,1W,AF,TP,3.9x10mm	
R428	2001-001043	R-CARBON(S):0OHM,5%,1/2W,AA,TP,-		R824	2001-001125	R-CARBON(S):300KOHM,5%,1/2W,AA,TP,-	
R429	2001-001043	R-CARBON(S):0OHM,5%,1/2W,AA,TP,-		R826	2001-001153	R-CARBON(S):470HM,5%,1/2W,AA,TP,-	
R430	2001-001043	R-CARBON(S):0OHM,5%,1/2W,AA,TP,-		R901	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R501	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-		R902	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
R502	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-		R903	2001-000066	R-CARBON(S):10KOHM,5%,1/2W,AA,TP,-	
R503	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-		R904	2004-000218	R-METAL:10Kohm,1%,1/8W,AA,TP,1.8x3.2mm	
R505	2008-000254	R-FUSIBLE(S):0.68ohm,5%,2W,AF,TP,3.9x10mm		R905	2004-000218	R-METAL:10Kohm,1%,1/8W,AA,TP,1.8x3.2mm	
R506	2008-000299	R-FUSIBLE(S):47ohm,5%,2W,AF,TP,3.9x10mm		R906	2004-000218	R-METAL:10Kohm,1%,1/8W,AA,TP,1.8x3.2mm	
R507	2001-000490	R-CARBON:200OHM,5%,1/8W,AA,TP,-		R908	2001-000241	R-CARBON:1.5KOHM,5%,1/8W,AA,TP,-	
R508	2001-000490	R-CARBON:200OHM,5%,1/8W,AA,TP,-		R909	2001-000472	R-CARBON:2.7KOHM,5%,1/8W,AA,TP,-	
R509	2001-000490	R-CARBON:200OHM,5%,1/8W,AA,TP,-		R910	2001-000924	R-CARBON:680OHM,5%,1/8W,AA,TP,-	
R510	2002-001009	R-COMPOSITION:2.7Kohm,10%,1/2W,AA,TP,3.7X9.0		R911	2001-000214	R-CARBON:1.1KOHM,5%,1/8W,AA,TP,-	
R517	2002-001009	R-COMPOSITION:2.7Kohm,10%,1/2W,AA,TP,3.7X9.0		R912	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
R518	2002-001009	R-COMPOSITION:2.7Kohm,10%,1/2W,AA,TP,3.7X9.0		R913	2001-000241	R-CARBON:1.5KOHM,5%,1/8W,AA,TP,-	
R519	2002-001009	R-COMPOSITION:2.7Kohm,10%,1/2W,AA,TP,3.7X9.0		R914	2001-000472	R-CARBON:2.7KOHM,5%,1/8W,AA,TP,-	

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
R918	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-		CA04	2202-000720	C-CERAMIC,MLC-AXIAL:8.2nF,20%,16V,Y5R,TP,3.5x19,-	
R919	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-		CA05	2202-000720	C-CERAMIC,MLC-AXIAL:8.2nF,20%,16V,Y5R,TP,3.5x19,-	
R920	2001-000273	R-CARBON:100KOHM,5%,1/8W,AA,TP,-		CA06	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11,5	
R921	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-		CA07	2401-001840	C-AL:100uF,20%,16V,GP,TP,6.3x11,5	
R922	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-		CN01A	AA39-20068E	LEAD-CONNECTOR,ASSY:-,YBNH025-08,67096-008,8P,500,	
R923	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-		CN05A	AA39-20069A	LEAD-CONNECTOR,ASSY:-,YBNH025-05,67096-005,5P,500,	
R924	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-		CN06A	AA39-20499B	LEAD CONNECTOR-ASSY:-,YBNH025-04,SMP025-04,4P,200	
R925	2001-000924	R-CARBON:680OHM,5%,1/8W,AA,TP,-		JE01	3722-000143	JACK-PHONE:1P(VER),3.4mm,AG,BLK,NO	
R926	2001-000924	R-CARBON:680OHM,5%,1/8W,AA,TP,-		JR01	3722-001031	JACK-RCA:3P,3.6mm,#18,AU	
R927	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm		LA04	2701-000180	INDUCTOR-AXIAL:33uH,5%,2.5x3.4mm	
R928	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm		LA05	2701-000180	INDUCTOR-AXIAL:33uH,5%,2.5x3.4mm	
R929	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm		RA01	2001-000028	R-CARBON(S):100OHM,5%,1/2W,AA,TP,-	
R930	2001-000628	R-CARBON:300OHM,5%,1/8W,AA,TP,-		RA02	2001-000028	R-CARBON(S):100OHM,5%,1/2W,AA,TP,-	
R932	2001-000780	R-CARBON:470OHM,5%,1/8W,AA,TP,-					
R933	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-					
R934	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-					
R935	2001-000780	R-CARBON:470OHM,5%,1/8W,AA,TP,-					
R936	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-					
R937	2001-001062	R-CARBON(S):10MOHM,5%,1/2W,AA,TP,-					
R939	2001-000006	R-CARBON:2.4KOHM,5%,1/8W,AA,TP,-					
R941	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
R942	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-					
R945	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
R948	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-					
R951	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-					
R953	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-					
R954	2001-000281	R-CARBON:100OHM,5%,1/8W,AA,TP,-					
R955	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-					
RE01	2004-001390	R-METAL(S):1Kohm,2%,1/2W,AA,TP,2.4x6.4mm					
RE02	2004-001914	R-METAL:39Kohm,2%,1/8W,AA,TP,1.8x3.5mm					
RE03	2001-000066	R-CARBON(S):10KOHM,5%,1/2W,AA,TP,-					
RE04	2001-000066	R-CARBON(S):10KOHM,5%,1/2W,AA,TP,-					
RE05	2001-000052	R-CARBON(S):3.3KOHM,5%,1/2W,AA,TP,-					
RE06	2004-001390	R-METAL(S):1Kohm,2%,1/2W,AA,TP,2.4x6.4mm					
RE07	2003-000652	R-METAL OXIDE(S):330ohm,5%,2W,AF,TP,4x12mm					
RE08	2001-001120	R-CARBON(S):3.3OHM,5%,1/2W,AA,TP,-					
RE09	2001-001125	R-CARBON(S):300KOHM,5%,1/2W,AA,TP,-					
RE10	2001-001125	R-CARBON(S):300KOHM,5%,1/2W,AA,TP,-					
RL801	3501-001040	RELAY-POWER:12VDC,500mW,10A,1FormA,15mS,5m					
RP802	1404-001045	THERMISTOR-NTC:4.7ohm,15%,2900K,35.0mW,TP					
RP803	1404-001087	THERMISTOR-PTC:7ohm,30%,220V,270V,19A,-,ST					
RT01	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
RT02	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
RT03	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-					
RT04	2001-000003	R-CARBON:330OHM,5%,1/8W,AA,TP,-					
RT05	2001-000780	R-CARBON:470OHM,5%,1/8W,AA,TP,-					
RT06	2001-000563	R-CARBON:27KOHM,5%,1/8W,AA,TP,-					
RT07	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-					
RT08	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
RT13	2001-000005	R-CARBON:390OHM,5%,1/8W,AA,TP,-					
RT14	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-					
RT15	2003-000676	R-METAL OXIDE(S):39ohm,5%,2W,AA,TP,4x12mm					
RT16	2001-000347	R-CARBON:13KOHM,5%,1/8W,AA,TP,-					
RT18	2001-000786	R-CARBON:47KOHM,5%,1/8W,AA,TP,-					
RT19	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
RT20	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-					
RW901	2011-000157	R-NETWORK:10K,5%,1/8W,A,SIP,6P,BK					
SF101	2904-000302	FILTER-SAW AV:38.90MHz,-,ST,13.9dB,PAL-B/G,-					
SW901	3404-000244	SWITCH-TACT:15V,20mA,90-170gf,7.5x7mm,SPST					
SW902	3404-000244	SWITCH-TACT:15V,20mA,90-170gf,7.5x7mm,SPST					
SW903	3404-000244	SWITCH-TACT:15V,20mA,90-170gf,7.5x7mm,SPST					
SW904	3404-000244	SWITCH-TACT:15V,20mA,90-170gf,7.5x7mm,SPST					
SW905	3404-000244	SWITCH-TACT:15V,20mA,90-170gf,7.5x7mm,SPST					
T401	AA26-50001R	TRANS-HORIZ DRIVE:-,80MH,580UH,4UH,G11A EI19,ST					
T444	AA26-30005Q	TRANS-FLYBACK:-,FUH-29A001(S),29/25,130V					
T801	AA26-20007W	TRANS-SWITCHING:-,90-260V,130/15.5/12/8V,VDE,S					
TU101	AA40-10006H	TUNER-V/S:TELE4-108A,PAL-B/G,TR,181CH					
V999	3704-001105	SOCKET-CRT:11P,20PI,26.5PI,Ni,-					
X202	2801-000274	CRYSTAL-UNIT:4.433619MHz,30ppm,28-AAM,20pF,					
X203	2801-000226	CRYSTAL-UNIT:3.579545MHz,20ppm,28-AAM,15pF,					
XT01	2801-003433	CRYSTAL-UNIT:12MHz,30ppm,28-AAA,30pF,30ohm,					
Z208	2903-000181	FILTER-CERAMIC:TR,5.5MHz,-,-,-,TP,TPS5.5MB-TF					
<b>ASSY-PCB,A/V SIDE</b>							
*	AA95-00004A	ASSY-PCB,A/V SIDE:-,566B-569B,S51A,PAL,-,-					

## ASSY-SOUND

*	AA95-00101A	ASSY-SOUND:-,CK,S51A,MONO,-,EUROPE	
CFM01	2904-001054	FILTER-SAW AV:38.9MHz,SIP5P,-,13.9dB,NTSC-M/	
CFM02	2904-001010	FILTER-SAW AV:32.9-33.4MHz,SIP5P,ST,14.4dB,P	
CM01	2301-000383	C-FILM,PEF:10nF,5%,50V,TP,6x7x3.2mm,5mm	
CM02	2401-000603	C-AL:1uF,20%,50V,GP,TP,5x11,5	
CM03	2401-002144	C-AL:47uF,20%,16V,GP,TP,5x11,5	
CM04	2305-000665	C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,	
CM05	2202-000127	C-CERAMIC,MLC-AXIAL:10nF,+80-20%,25V,Y5V,TP,-,7.5	
CM06	2202-000127	C-CERAMIC,MLC-AXIAL:10nF,+80-20%,25V,Y5V,TP,-,7.5	
CM07	2301-000224	C-FILM,PEF:22nF,5%,50V,TP,7.4x3.9x13mm,5m	
CM08	2301-000383	C-FILM,PEF:10nF,5%,50V,TP,6x7x3.2mm,5mm	
CM09	2202-000127	C-CERAMIC,MLC-AXIAL:10nF,+80-20%,25V,Y5V,TP,-,7.5	
CM10	2202-000127	C-CERAMIC,MLC-AXIAL:10nF,+80-20%,25V,Y5V,TP,-,7.5	
CM11	2202-000127	C-CERAMIC,MLC-AXIAL:10nF,+80-20%,25V,Y5V,TP,-,7.5	
CM12	2401-001333	C-AL:470nF,20%,50V,GP,TP,5x11,5	
CM13	2401-001333	C-AL:470nF,20%,50V,GP,TP,5x11,5	
CM14	2401-000660	C-AL:2.2uF,20%,50V,GP,TP,5x11,5	
CM15	2401-000660	C-AL:2.2uF,20%,50V,GP,TP,5x11,5	
CM16	2401-000660	C-AL:2.2uF,20%,50V,GP,TP,5x11,5	
CM17	2401-000660	C-AL:2.2uF,20%,50V,GP,TP,5x11,5	
CM19	2301-000383	C-FILM,PEF:10nF,5%,50V,TP,6x7x3.2mm,5mm	
CNN01	3711-002704	CONNECTOR-HEADER:NOWALL,6P,1R,2.5mm,ANGLE,SN	
CNN02	3711-002705	CONNECTOR-HEADER:NOWALL,7P,1R,2.5mm,ANGLE,SN	
DM01	0401-001024	DIODE-SWITCHING:BAW75,25V,300mA,DO-35,TP	
DM02	0401-001024	DIODE-SWITCHING:BAW75,25V,300mA,DO-35,TP	
DM03	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
DM04	0401-000005	DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP	
ICM01	1204-001491	IC-SOUND PROCESSOR:LA7566S,DIP,24P,300MIL,PLASTIC,1	
JM01	2701-000114	INDUCTOR-AXIAL:10uH,10%,2.5x3.4mm	
LM02	2701-000202	INDUCTOR-AXIAL:560nH,10%,2.5x3.4mm	
QM01	0504-000125	TR-DIGITAL:KSR1012,NPN,300mW,47K,TO-92,TP	
QM04	0504-000123	TR-DIGITAL:KSR1010,NPN,300mW,10K,TO-92,TP	
QM05	0504-000123	TR-DIGITAL:KSR1010,NPN,300mW,10K,TO-92,TP	
QM06	0504-000123	TR-DIGITAL:KSR1010,NPN,300mW,10K,TO-92,TP	
QM07	0504-000119	TR-DIGITAL:KSR1004,NPN,300mW,47K-47K,TO-9	
QM08	0504-000119	TR-DIGITAL:KSR1004,NPN,300mW,47K-47K,TO-9	
QM09	0501-000283	TR-SMALL SIGNAL:KSA539,PNP,400mW,TO-92,TP,120-	
RM01	2001-000290	R-CARBON:10KOHM,5%,1/8W,AA,TP,-	
RM02	2001-000362	R-CARBON:150OHM,5%,1/8W,AA,TP,-	
RM03	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
RM04	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
RM05	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
RM06	2001-000429	R-CARBON:1KOHM,5%,1/8W,AA,TP,-	
RM09	2001-000522	R-CARBON:22KOHM,5%,1/8W,AA,TP,-	
RM10	2001-000522	R-CARBON:22KOHM,5%,1/8W,AA,TP,-	
RM11	2001-000003	R-CARBON:330OHM,5%,1/8W,AA,TP,-	
RM13	2001-000003	R-CARBON:330OHM,5%,1/8W,AA,TP,-	
RM15	2001-000857	R-CARBON:560OHM,5%,1/8W,AA,TP,-	
RM16	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-	
RM17	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-	
RM18	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-	
RM19	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-	
RM20	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-	
RM21	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
RM22	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
RM23	2001-000449	R-CARBON:2.2KOHM,5%,1/8W,AA,TP,-	
RM24	2001-000008	R-CARBON:15KOHM,5%,1/8W,AA,TP,-	
RM25	2001-000734	R-CARBON:4.7KOHM,5%,1/8W,AA,TP,-	

Loc. No.	Code No.	Description ; Specification	Remark	Loc. No.	Code No.	Description ; Specification	Remark
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RM27 2001-000832 R-CARBON:510OHM,5%,1/8W,AA,TP,-  
 RM28 2001-000832 R-CARBON:510OHM,5%,1/8W,AA,TP,-  
 TM01 AA26-10006L TRANS-IF,-,7MG,VIF,-,7mm,39pF,38.9MHz,S  
 ZM01 2903-000200 FILTER-CERAMIC:BP,6.5MHz,+70KHz,6dB,-,TP,-  
 ZM03 2903-000185 FILTER-CERAMIC:BP,5.5MHz,+75KHz,6dB,-,TP,-


## ASSY-PCB,CONTROL

\* AA95-30002B ASSY-PCB,CONTROL:-,SCT12B,-,-  
 CN10A AA39-20177A LEAD-CONNECTOR,ASSY:-,YBNH025-05,67096-005,5P,300,  
 CR01 2401-002144 C-AL:47uF,20%,16V,GP,TP,5x11,5  
 LDR01 0601-000198 LED:ROUND,RED/GRN,5.0mm,630/565nm  
 PAR01 AA59-60003J MODULE-REMOCON:-,ORC-06H2,38KHz,940nm,MESH,H,  
 RR01 2001-000793 R-CARBON:470OHM,5%,1/8W,AA,TP,-  
 RR02 2001-000522 R-CARBON:22KOHM,5%,1/8W,AA,TP,-

## ASSY-R/G/B SWITCHING

\* AA95-90038K ASSY-R/G/B SWITCHING:-,S51A,PHILIPS MICOM ALL,-,-  
 CNS01 3711-002702 CONNECTOR-HEADER:NOWALL,4P,1R,2.5mm,ANGLE,SN  
 CNS02 3711-002703 CONNECTOR-HEADER:NOWALL,5P,1R,2.5mm,ANGLE,SN  
 CNS03 AA39-20052F LEAD CONNECTOR-ASSY:-,YBNH025-04,YSH025-04,4P,200  
 CS01 2401-002619 C-AL:47uF,20%,25V,GP,TP,5x11,5  
 CS02 2305-000665 C-FILM,MPEF:100nF,5%,63V,TP,7.5x4.0x5.0mm,  
 CS03 2202-002037 C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.  
 CS04 2202-002037 C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.  
 CS05 2202-002037 C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.  
 CS06 2202-002037 C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.  
 CS07 2202-002037 C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.  
 CS08 2202-002037 C-CERAMIC,MLC-AXIAL:100nF,80-20%,50V,Y5V,TP,2.2x3.  
 DS01 0401-000005 DIODE-SWITCHING:1N4148,75V,200MA,DO-35,TP  
 ICS01 1001-000223 IC-VIDEO SWITCH:TEA5114A,-,DIP,16P,334MIL,SING  
 RS01 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS04 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS06 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS07 2001-000429 R-CARBON:1KOHM,5%,1/8W,AA,TP,-  
 RS08 2001-000429 R-CARBON:1KOHM,5%,1/8W,AA,TP,-  
 RS09 2001-000429 R-CARBON:1KOHM,5%,1/8W,AA,TP,-  
 RS10 2001-000429 R-CARBON:1KOHM,5%,1/8W,AA,TP,-  
 RS11 2001-000429 R-CARBON:1KOHM,5%,1/8W,AA,TP,-  
 RS12 2001-000429 R-CARBON:1KOHM,5%,1/8W,AA,TP,-  
 RS13 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS14 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS15 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS16 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS17 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-  
 RS18 2001-000003 R-CARBON:330OHM,5%,1/8W,AA,TP,-

## ASSY-POWER,CORD

 3403-000179 SWITCH-PUSH:250V,5A,DPST,-,JPW-2104B  
 AA39-10005A POWER-CORD:-,KKP419C,KLCE-2F,2.286MT,INLE  
 AA39-20175B LEAD CONNECTOR-ASSY:-,YFH150-03,-,3(2)P,200mm,1617

LEADC

## REMOCON

\* AA59-10116A REMOCON:-,TM59,SS,SZM503AT,29,-,-,L/GR

## ASSY-HOLDER,SPK

\* AA91-60003A ASSY-HOLDER,SPK:-,PP,-,-,8ohm 10W,CT2199

## ASSY-CRT

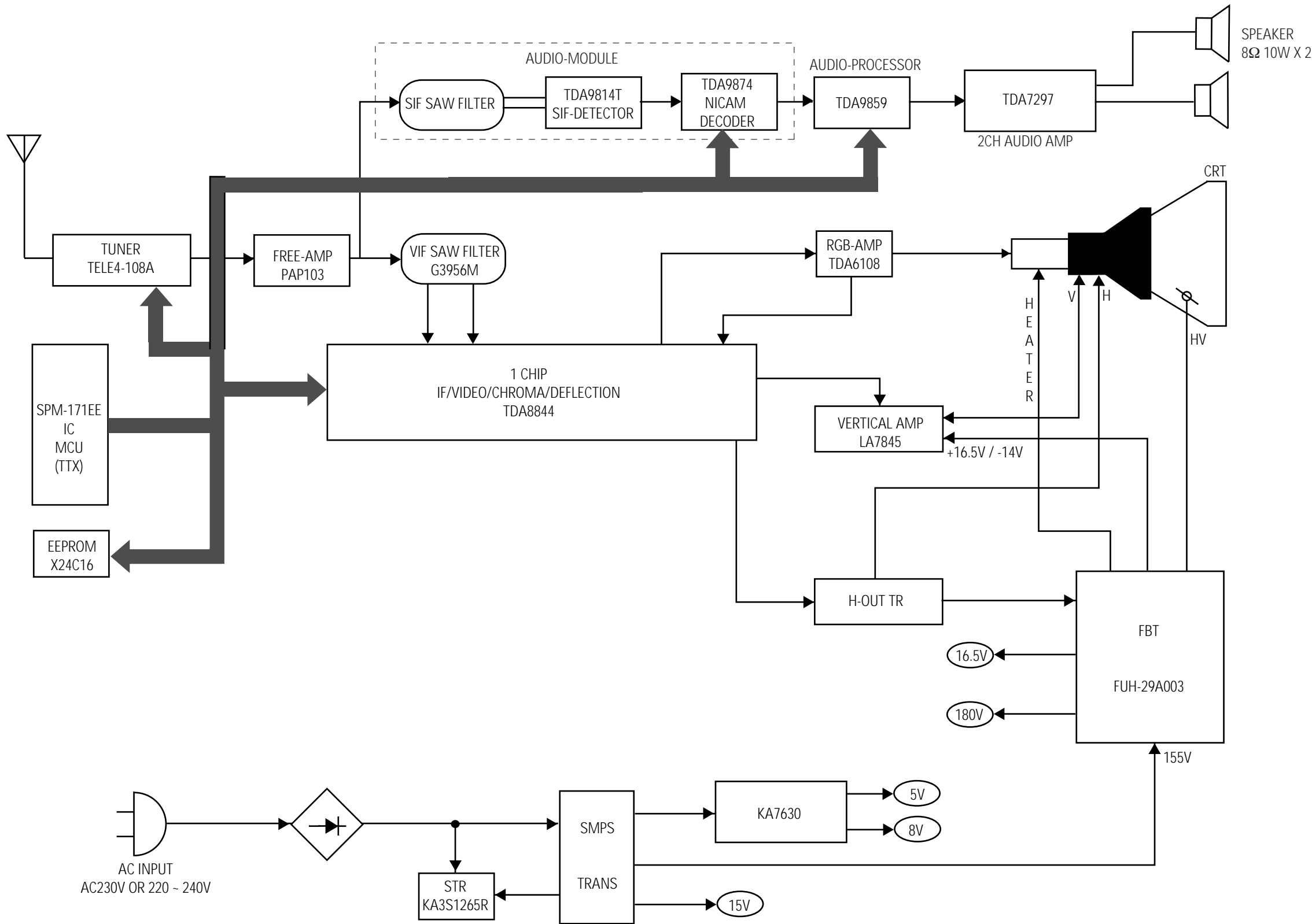
 AA03-10023R CRT-COLOR:-,A59KPR84X01(DB),+500mG,25,1

## ASSY-ACCESSORY

AA39-40001B CABLE-RCA:-,RCA,1500mm,0.12/10,RED/WHT/Y  
 AA68-00043A MANUAL-USERS:S51A,RUS,-,B5,W/P100(G),-

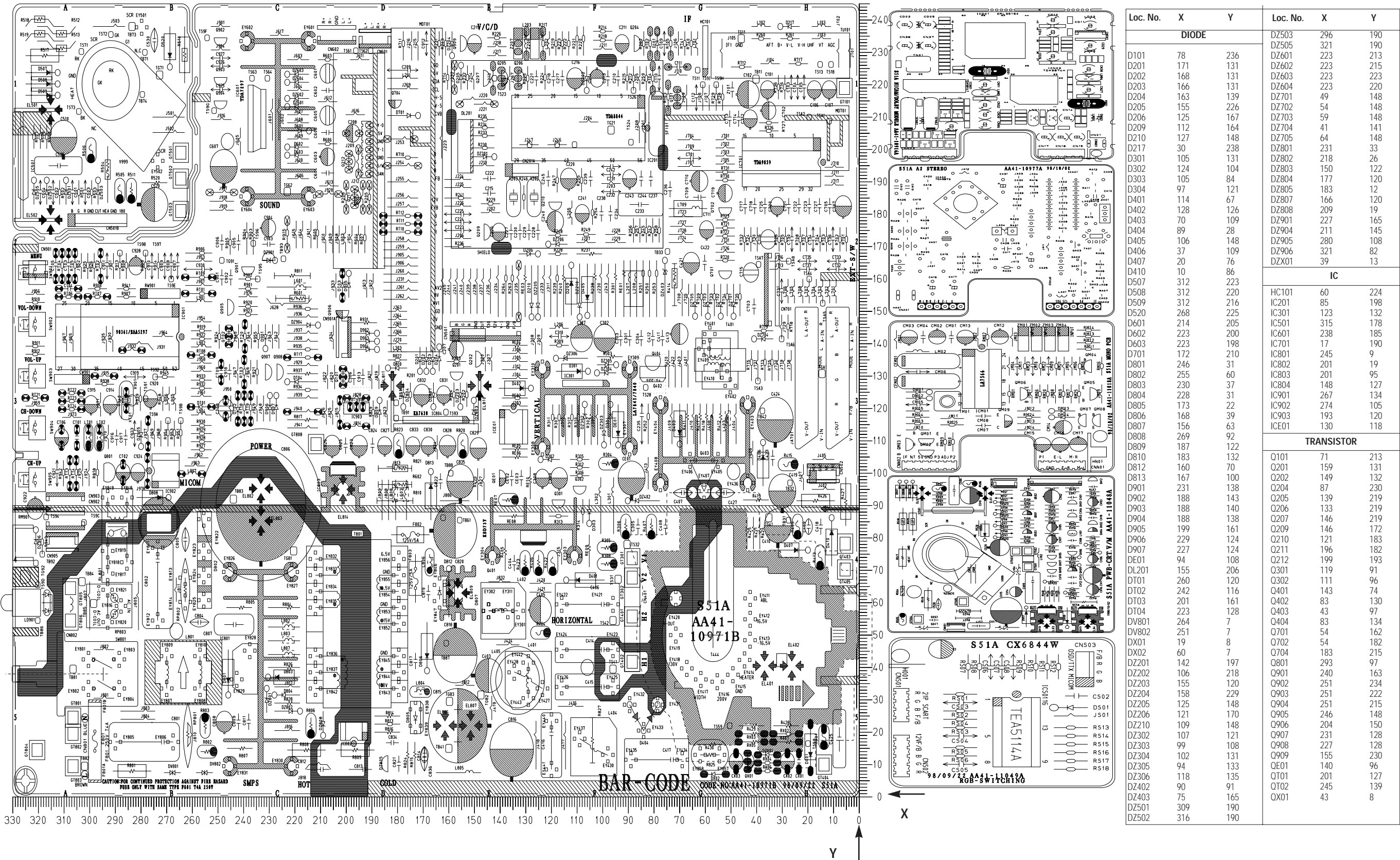
# 8. Block Diagram

## 8-1 S51A



9. PCB Layout

9-1 PCB Main



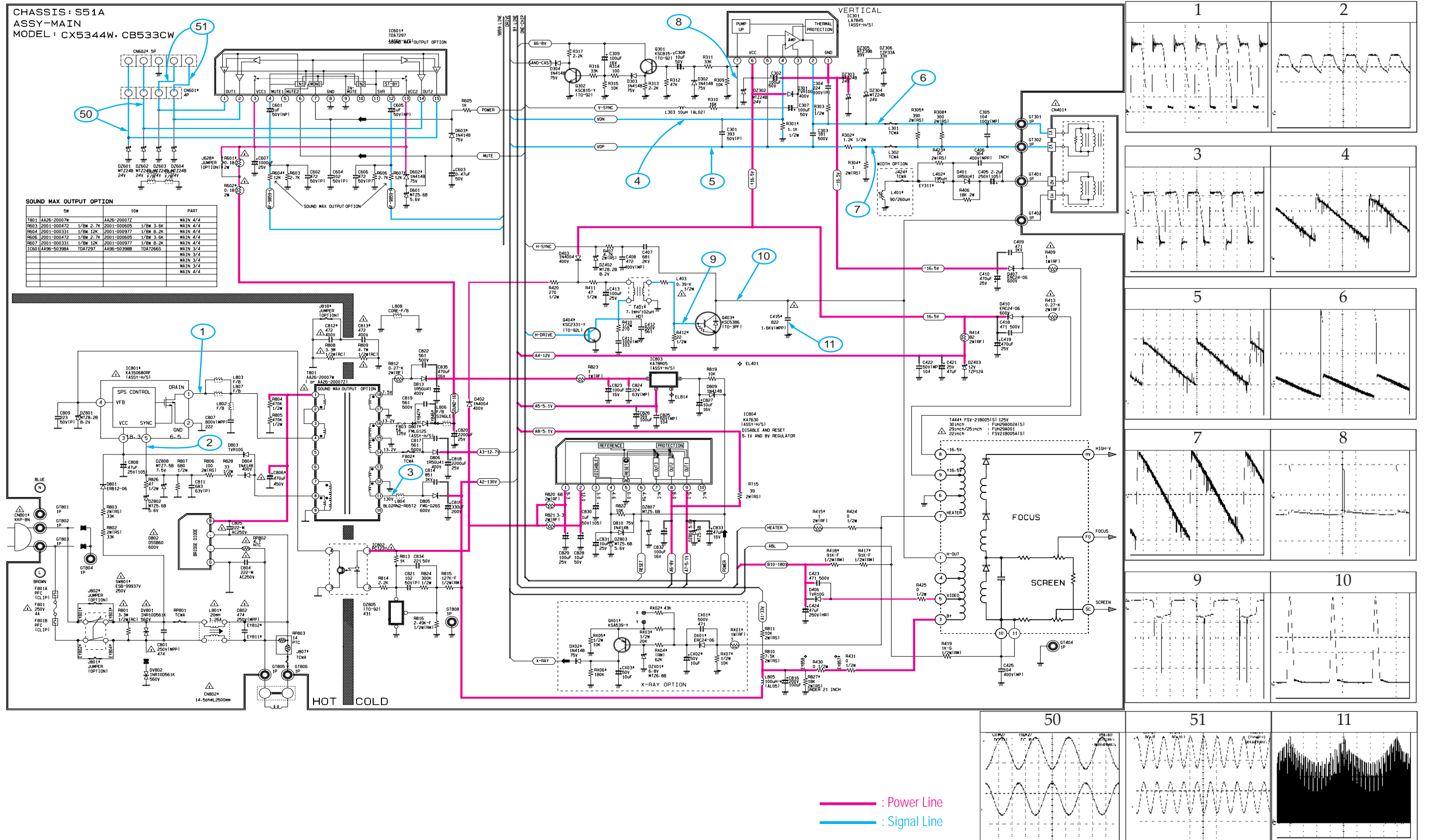


# MEMO



## 11. Schematic Diagrams

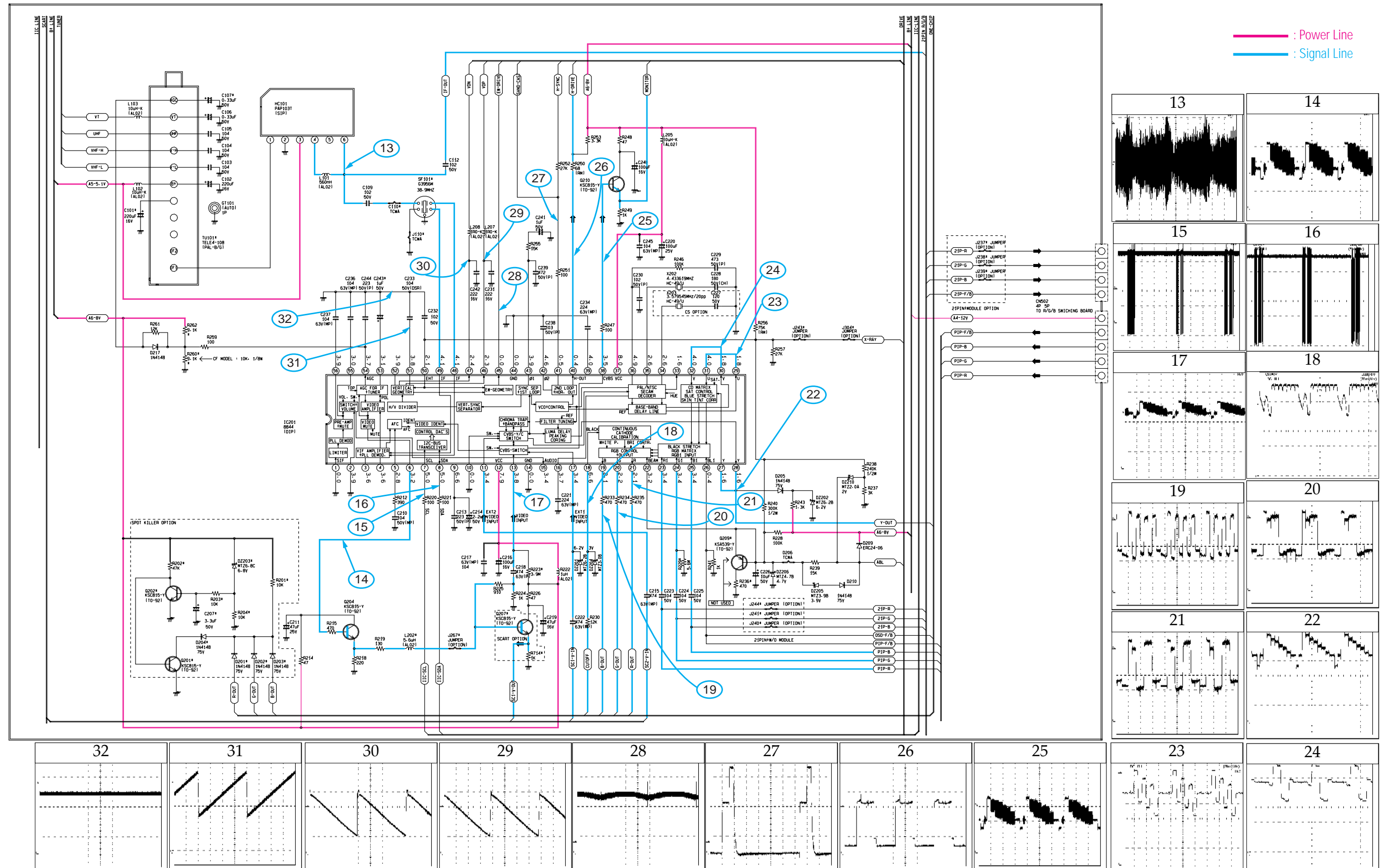
## 11-1 MAIN (Power 21")



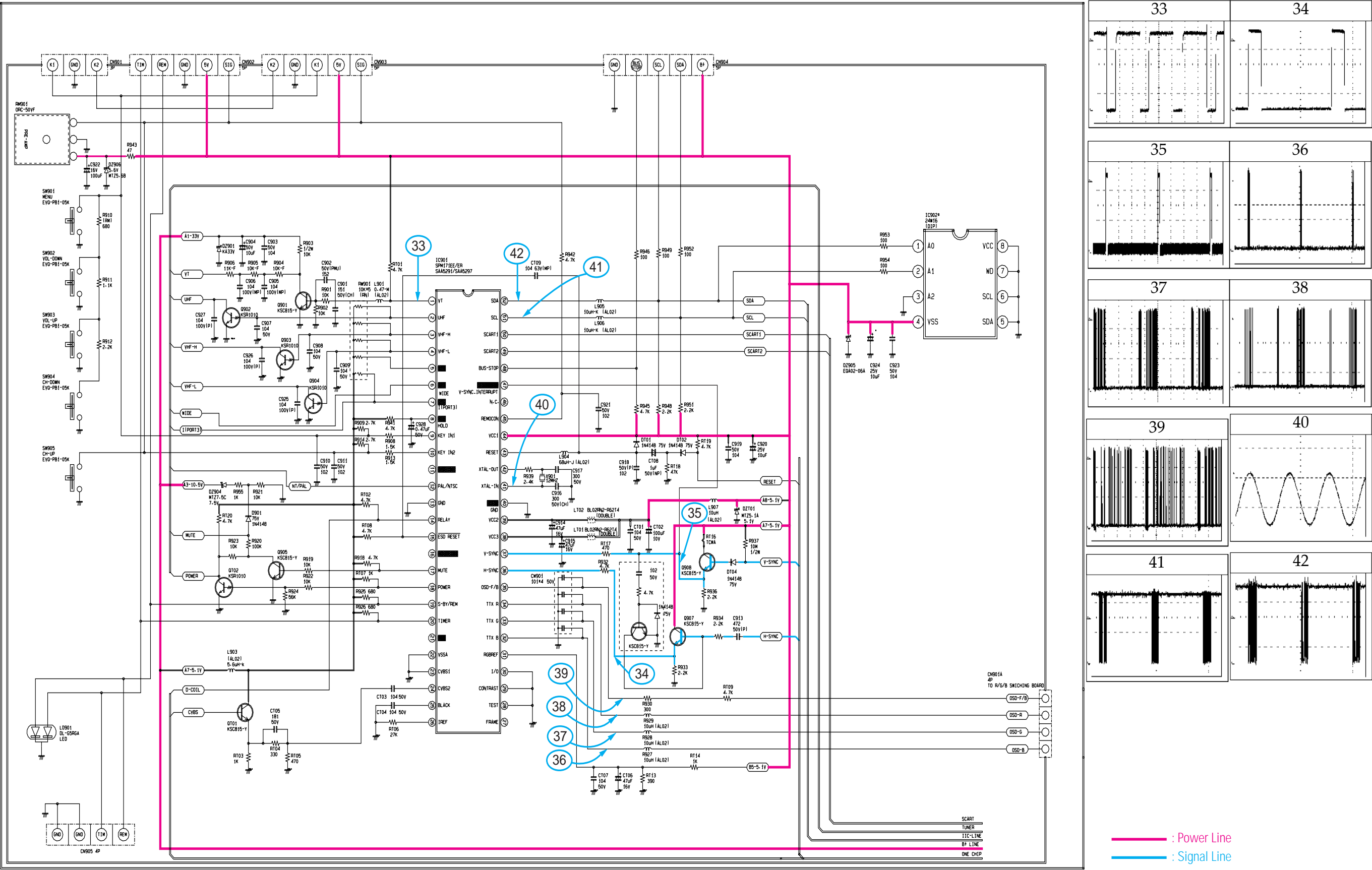


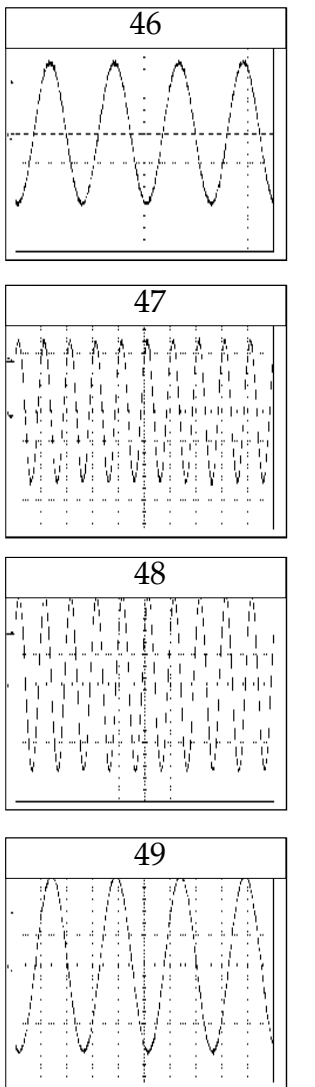


## 11-3 PWB MAIN (One-Chip)

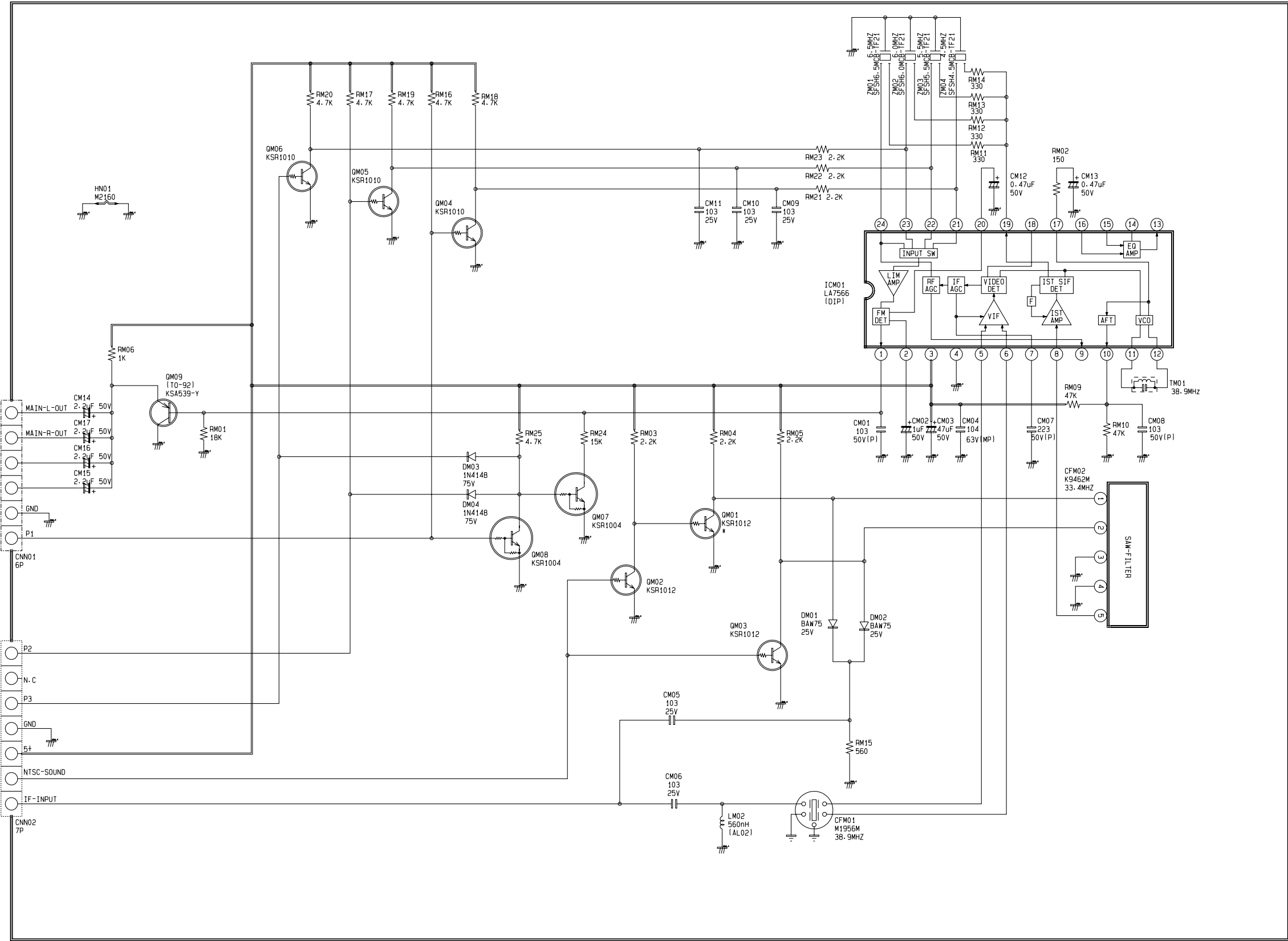


11-4 PWB MAIN (u-COM)





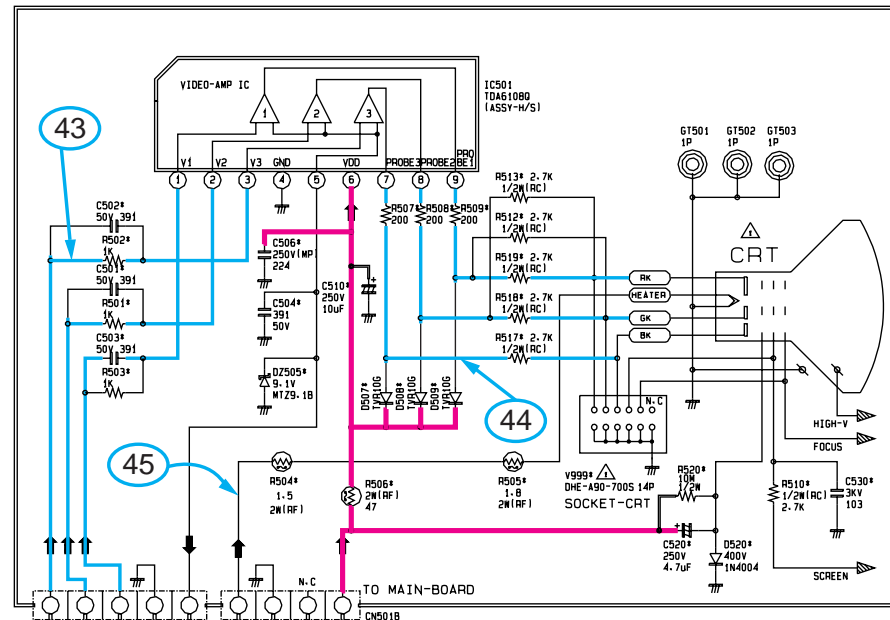
11-6 PWB MAIN (Sound Module Mono)



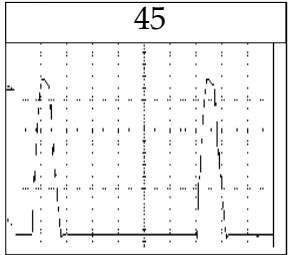
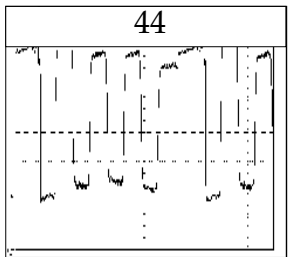
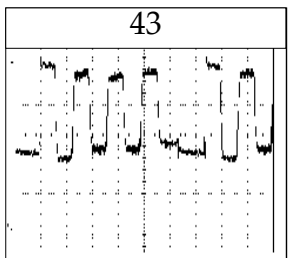
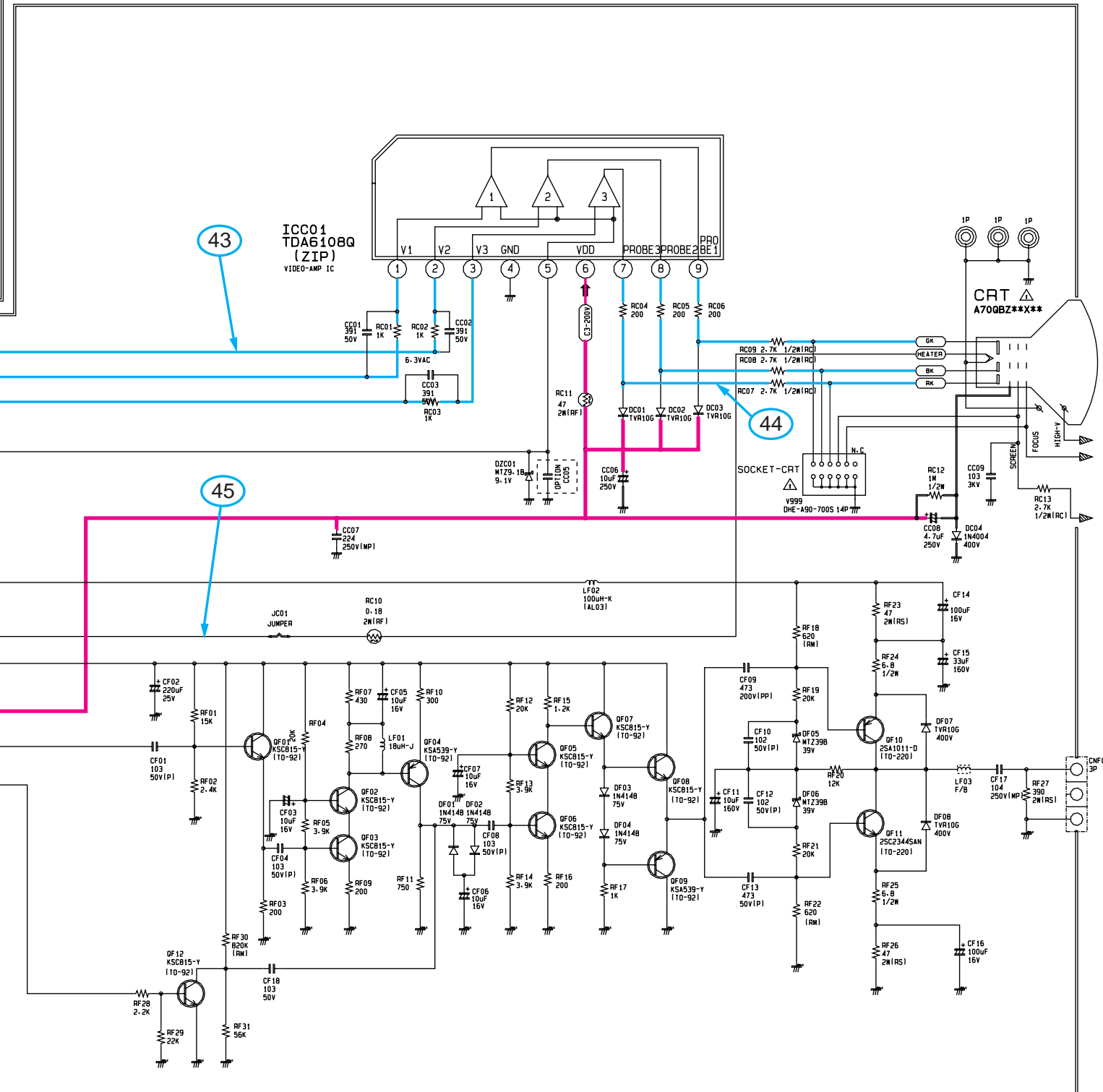


## 11-7 PWB MAIN (CRT)

WITHOUT VM (PHILIPS NORMAL CRT)



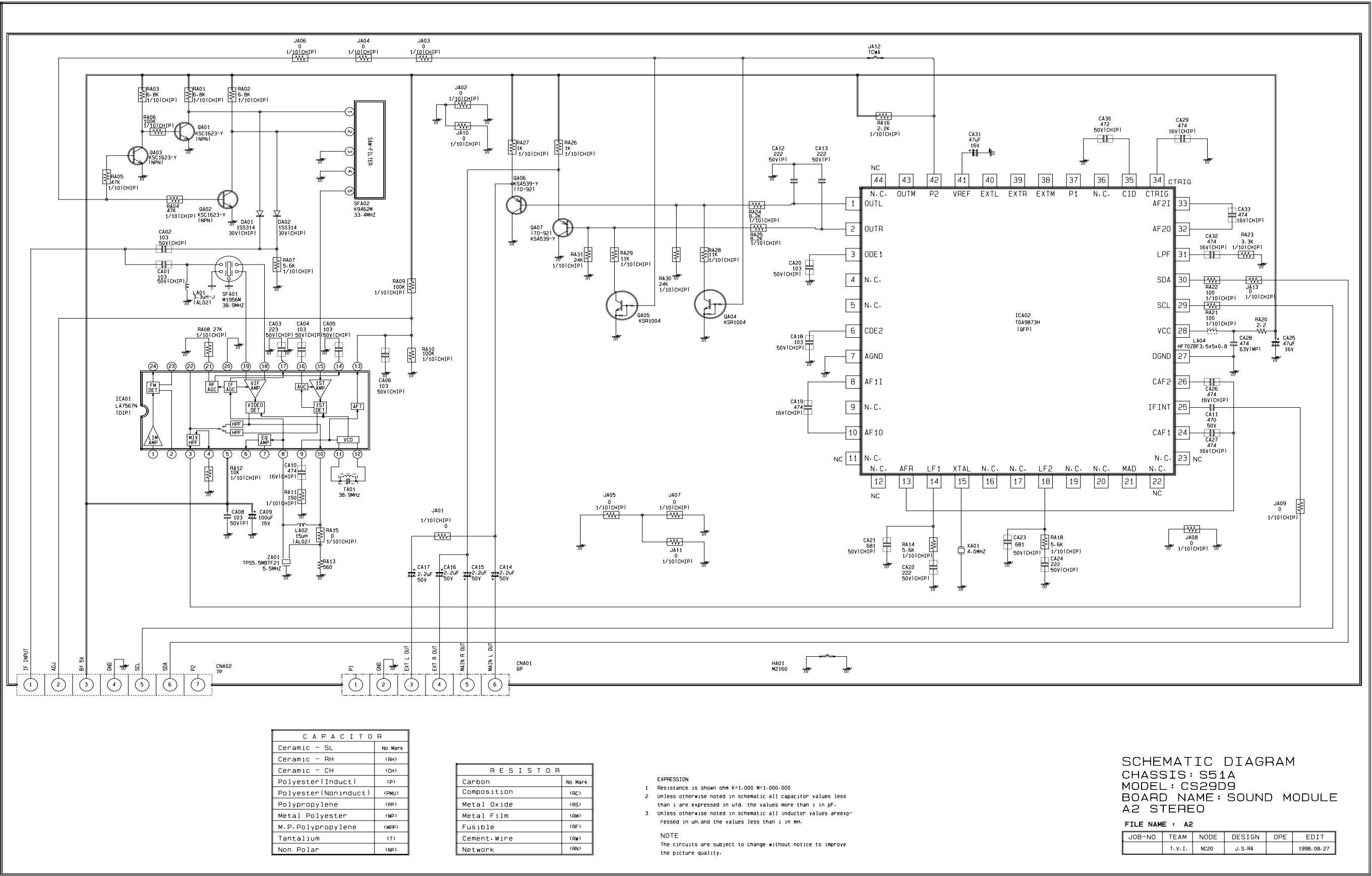
WITH VM (PHILIPS INVAR CRT)



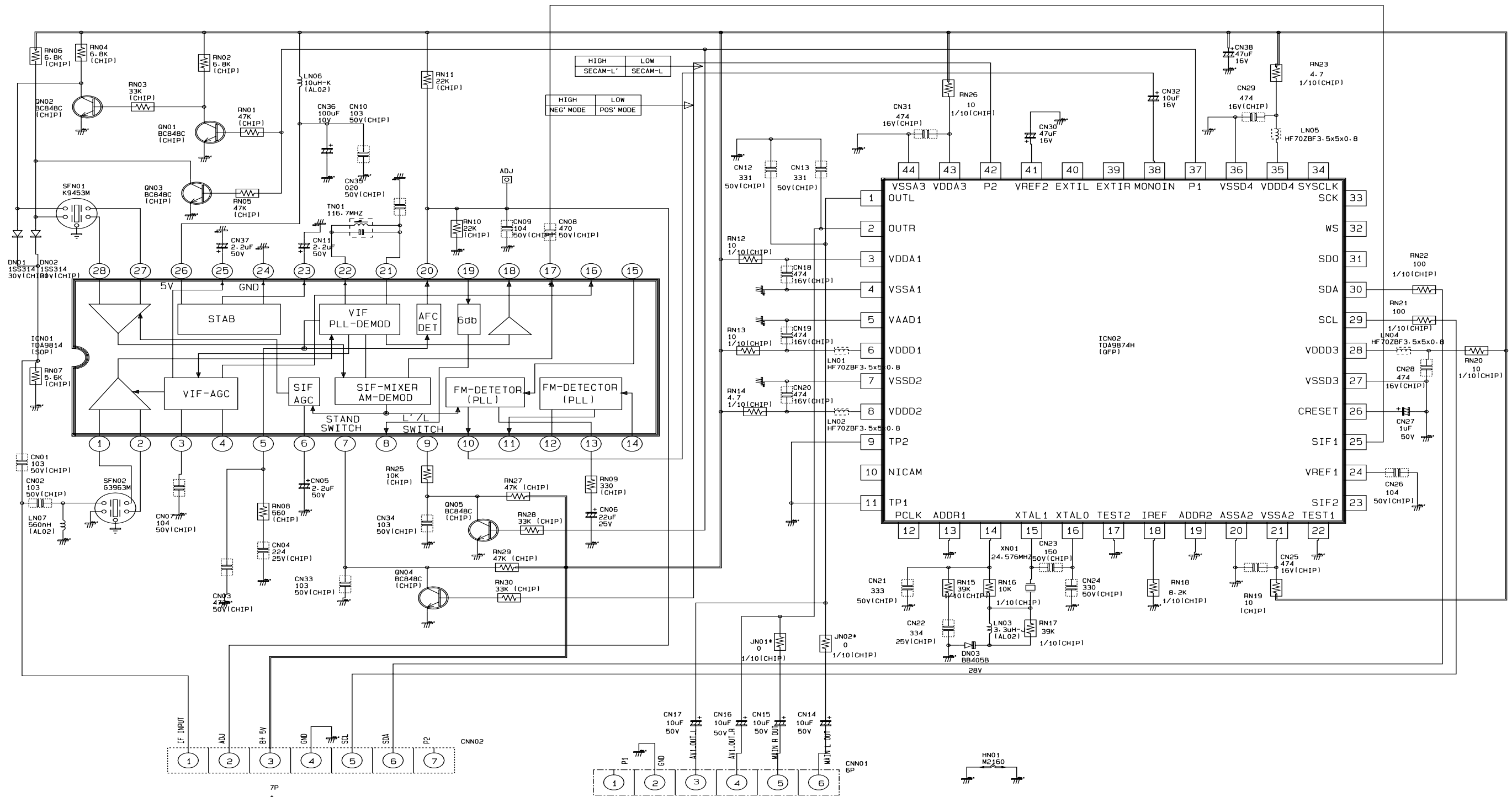
OPTION					
NORMAL VS INVAR OPT OPTION					
	PHILIPS INVAR OPT		PHILIPS NORMAL OPT		Remarks
LOC NO	CODE NO	SPEC.	CODE NO	SPEC.	
C406	2306-000204	C-FIL.MWV-1.66V-434	2306-000195	C-FIL.MWV-1.66V-364	
C416	2306-000339	C-FIL.MWV-1.66V-772	2306-000330	C-FIL.MWV-1.66V-772	
C415	2306-000237	C-FIL.MWV-1.66V-532	2306-000178	C-FIL.MWV-1.66V-352	
C416		C-FIL.MWV-400V-223	2303-010206	C-FIL.MWV-400V-163	
R301	2007-0101054	R-CARBON-1.5K-1/2H	2001-010149	R-CARBON-1.2K-1/2H	
R302		R-CARBON-1.5K-1/2H	2001-010149	R-CARBON-1.2K-1/2H	
R415	2008-0101013	R-FIL.ME-1.5-2H-1#1	2008-010131	R-FIL.ME-1.5-1H-1	
M415	2007-0101052	R-CARBON-5/2H-4IN	2004-010187	R-CARBON-1/2H-50K-4	
T444	A42E-3000Y5	TRANS-FIL.FIBERQUAD4	A42E-3000Y5	TRANS-FIL.FIBERQUAD3	
		K2D		NONE	
R305	2003-000398	R-ME1T01S1-2K-360	2003-000269	R-ME1T01S1-2K-240	
R306	2003-000398	R-ME1T01S1-2K-360	2003-000269	R-ME1T01S1-2K-240	
R308	2003-000098	R-ME1T01S1-2K-360	2003-000068	R-ME1T01S1-2K-240	

 : Power Line  
 : Signal Line

11-8 PWB MAIN (SOUND MODULE STEREO)



## 11-9 PWB MAIN (SOUND MODULE NICAM)



C A P A C I T O R	
Ceramic - SL	No Mark
Ceramic - RH	(RH)
Ceramic - CH	(CH)
Polyester(Induct)	(P)
Polyester(Noninduct)	(PMU)
Polypropylene	(PP)
Metal Polyester	(MP)
M.P. Polypropylene	(MPP)
Tantalum	(T)
Non Polar	(NP)

R E S I S T O R	
Carbon	No Mark
Composition	⟨RC⟩
Metal Oxide	⟨RS⟩
Metal Film	⟨RM⟩
Fusible	⟨RF⟩
Cement Wire	⟨RW⟩
Network	⟨RN⟩

EXPRESSION

1 Resistance is shown ohm K=1.000 M=1.000.000

2 Unless otherwise noted in schematic all capacitor values less than 1 are expressed in uF. the values more than 1 in pF.

3 Unless otherwise noted in schematic all inductor values are expressed in uH. and the values less than 1 in mH.

NOTE

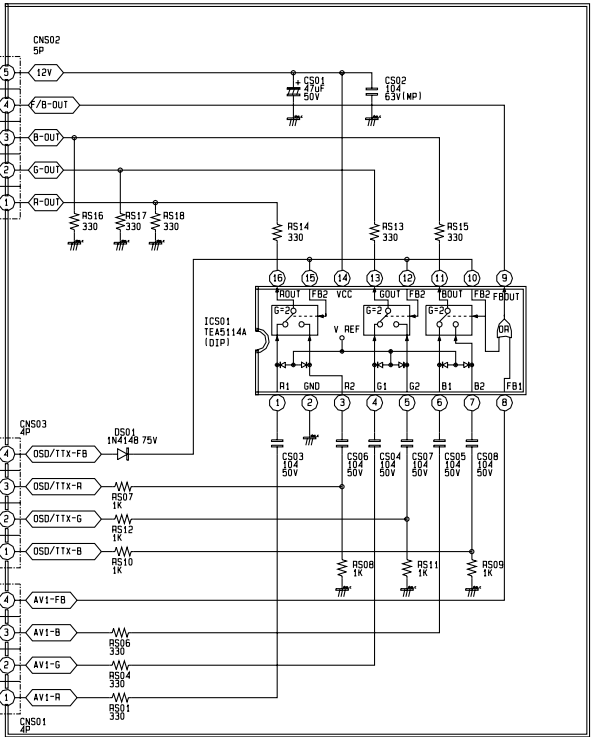
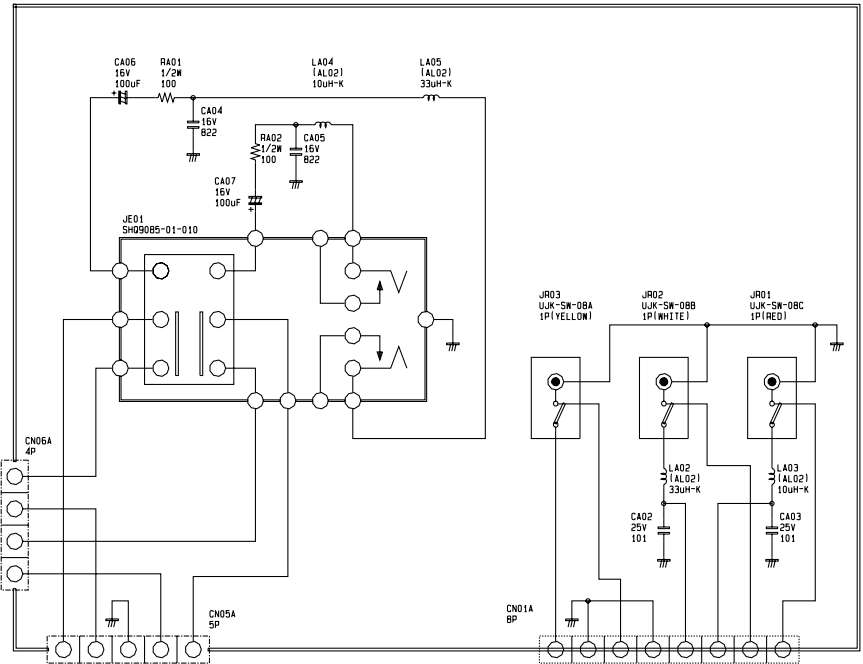
The circuits are subject to change without notice to improve the picture quality.

SCHEMATIC DIAGRAM  
CHASSIS: S51A  
MODEL :  
BOARD NAME: SECAN-L, L' NICAM



11-10 PWB MAIN (A/V FRONT / VIDEO SWITCH)

FRONT-A/V



RGB - S/W MODULE

CAPACITOR	
Ceramic - SL	No Mark
Ceramic - RH	<RH>
Ceramic - CH	<CH>
Polyester(Induct)	<P>
Polyester(Noninduct)	<PM>
Polypropylene	<PP>
Metal Polyester	<MP>
M.P.Polypropylene	<MPP>
Tantalium	<T>
Non Polar	<NP>

RESISTOR	
Carbon	No Mark
Composition	<RC>
Metal Oxide	<RS>
Metal Film	<RM>
Fusible	<RF>
Cement-Wire	<RW>
Network	<RN>

- NOTE
1. Resistance is shown in ohm K=1,000 M=1,000,000
  2. Unless otherwise noted in schematic all capacitor values less than 1 are expressed in  $\mu$ F, and the values more than 1 in pF.
  3. Unless otherwise noted in schematic all inductor values more than 1 are expressed in  $\mu$ H.
  4. Voltage read with V.T.V.M (input impedance 20 M $\Omega$ /all range) from point indicated to chassis ground using a color bar signal with all control at normal line voltage 120 volts.
  5. Waveforms in chromance circuit are taken receiving a color bar signal with enough sensitivity.
  6. Waveforms in other circuit are taken using an signal under normal receiving conditions.
  7. Voltage readings shown are normal values and may vary 20% except H.V.
  8. This is fundamental circuit diagram some production changes may be made without revision of the diagram.
  9. The circuits enclose in dotted lines are optional parts. [x]

WARNING : BEFORE SERVICING THIS CHASSIS READ THE 'X-RAY RADIATION PRECAUTION' 'SAFETY PRECAUTION' AND PRODUCT SAFETY NOTICE' IN MANUAL.

CAUTION : The shaded Area in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit of specified in the parts list. Before replacing and of these components. Read carefully the PRODUCT SAFETY NOTICE. In this manual. Do not degrade the safety of the receiver through improper servicing.